

Central Engine of Active Galactic Nuclei

2006.10.16–2006.10.21

Contributed Abstract

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1 Session—Black Hole Chair: J. Shields

Mon, October 16

- 08:00-08:50 Registration, poster set-up
- 08:50-09:00 Opening remarks (L. Ho/J.-M. Wang)
- 09:00-09:35 (I) B. Peterson (reverberation mapping overview)
- 09:35-10:05 (I) S. Kaspi (BH mass determination)
- 10:05-10:25 (C) TBD
- 10:25-10:45 (C) TBD
- **10:45-11:00 Coffee break and posters**
- 11:00-11:20 (C) TBD
- 11:20-11:40 (C) TBD
- 11:40-12:00 (C) TBD
- **12:00-14:00 Lunch**

1.1 Contributed Oral Reports:

1.1.1 your ID: 0004

First Name: Michael

Last Name: Strauss

Affiliation: Princeton University

Title: The clustering properties of quasars and the masses of the black holes

Authors: Strauss et al.

Abstract: We have used the SDSS to explore the clustering properties and environments of $z > 3$ quasars. Assuming a relationship between black hole mass and halo mass, one expects luminous high-redshift quasars to sit on highly biased peaks of the density field, and therefore to be strongly clustered. We will present a variety of tests of this idea, which should constrain models for quasar feeding and the relationship between black holes and their host haloes.

1.1.2 your ID: 0055

First Name: Alessandro

Last Name: Marconi

Affiliation: INAF-Osservatorio Astrofisico di Arcetri

Title: The relation among Black Holes, their host galaxies and AGN activity

Authors: Alessandro Marconi

Abstract: I will discuss the genesis of BH-galaxy relations and I will then derive the demography of local BHs. The comparison with expected AGN remnants will then allow me to analyze the connection among BHs, X-ray-background and galaxies with emphasis on the down-sizing inferred from the latest AGN luminosity functions.

1.1.3 your ID: 0069

First Name: Loretta

Last Name: Gregorini

Affiliation: Dept. of Physics - University of Bologna

Title: Radio and optical properties of the faint radio population

Authors: Gregorini L., Prandoni I. et al.

Abstract: A sub-region previously covered by the sub-mJy ATESP 1.4 GHz (Prandoni et al. 2000a, b) was observed with the ATCA at 5 GHz. In the same region deep optical imaging in UBVRI ($I(AB) \sim 26$) was available. The data may help to constrain the origin of the radio emission in such faint radio sources and may be fundamental in understanding eventual links to the optical light. Preliminary results of the analysis of these data are: a) The 5 GHz counts do not show evidence of flattening down to the survey limit. b) A flattening of the spectral index with decreasing flux densities was found. At mJy level we have mostly steep-spectrum synchrotron radio sources, while at sub-mJy flux densities we have a composite population, with $\sim 60\%$ of the 5 GHz sources showing flat spectra and a significant fraction ($\sim 30\%$ at 5 GHz) of inverted-spectrum sources. c) Optical properties of the identified radio sources (i.e. photometric redshifts, galaxy classification etc.) were obtained.

1.1.4 your ID: 0077

First Name: Nicola

Last Name: Menci

Affiliation: INAF-Osservatorio Astronomico di Roma

Title: Supermassive Black Holes and AGNs in Hierarchical Galaxy Formation and Evolution

Authors: N. Menci

Abstract: I will discuss current models to include the feeding of Supermassive Black Holes into ab initio cosmological models of galaxy formation. The role of galaxy interactions in the accretion processes powering the AGNs will be discussed.

1.1.5 **your ID: 0089**

First Name: Jiajian

Last Name: Shen

Affiliation: Pennsylvania State University

Title: Black hole mass and host galaxy relationships

Authors: Jiajian Shen, Daniel Vanden Berk, Donald Schneider

Abstract: We have measured the stellar velocity dispersions and estimated the central black hole masses for over 900 broad line AGNs. The host galaxy luminosity-velocity dispersion relationship follows Faber-Jackson relation. The black hole masses are correlated with both the host luminosities and the stellar velocity dispersions.

1.1.6 **your ID: 0098**

First Name: Chris

Last Name: Done

Affiliation: University of Durham

Title: The origin of the soft X-ray excess in AGN

Authors: Done & Gierlinski

Abstract: The origin of the soft X-ray excess seen in most high mass accretion rate AGN is still an unsolved problem. It is unlikely to represent a true continuum component as its characteristic temperature remains constant over a wide range of AGN black hole mass. It is more likely to be the signature of partially ionised material with high velocity shear, seen either in reflection or absorption. I show that the absorption model can fit both the observed spectra and variability, and review other constraints which show that it may be more physically plausible than reflection.

1.1.7 **your ID: 0101**

First Name: Xue-Bing

Last Name: Wu

Affiliation: Peking University

Title: Weighing black holes in radio-loud AGNs

Authors: Xue-Bing Wu

Abstract: I will summarize some difficulties in estimating the black hole mass of radio-loud AGNs and present some results of our recent related works.

1.1.8 your ID: 0104

First Name: Myungshin

Last Name: Im

Affiliation: Seoul National University

Title: Seoul National University Bright Quasar Survey in Optical

Authors: Myungshin Im, Induk Lee, Minjin Kim, et al.

Abstract: We will present recent results from the SNUQSO (Seoul National University Bright Quasar Survey in Optical). SNUQSO is a survey of bright quasars, and the survey aims to provide a complete census on bright quasars ($i < 15 - 16$ mag) by detecting those that have been missed in previous surveys. Our main scientific goals include (i) discovery of any peculiar bright quasars; (ii) follow-up study of bright quasars through monitoring; and (iii) study of morphology of host galaxies in nearby, bright quasar systems. Our first results include the discovery of a bright quasar which ranks as one of the brightest among previously known quasars.

1.1.9 your ID: 0111

First Name: Yufeng

Last Name: Mao

Affiliation: National Astronomical Observatories

Title: The variability research of quasars from SDSS

Authors: Mao Yufeng, Wei Jianyan

Abstract: We do the photometry measurement of 76 low-redshift QSOs by 80cm in Xinglong, and compare the magnitude of B, R bands with those of SDSS. We discuss the correlation analysis of the variability amplitude with the physical parameters of these QSOs and analyze the results.

1.1.10 your ID: 0117

First Name: Mario

Last Name: Gliozzi

Affiliation: George Mason University

Title: Recent X-ray observations of radio galaxies

Abstract: We present the results of recent observations of radio galaxies ranging from low-power AGN/LINERs observed with XMM-Newton to more powerful objects such as the broad-line radio galaxy 3C382 observed simultaneously with Chandra and RXTE. The main aim of our investigation is to shed some light on the origin of the X-ray emission and on the nature of the accretion process in these objects.

1.1.11 your ID: 0119

First Name: Jonathan

Last Name: Trump

Affiliation: University of Arizona

Title: A Multiwavelength Study of AGN With COSMOS

Authors: Jonathan Trump, Chris Impey, Pat McCarthy, Martin Elvis

Abstract: The multiwavelength coverage of the COSMOS project, with deep observations at radio, infrared, optical, UV, and X-ray wavelengths, allows for an unparalleled study of the bolometric properties of AGN. Our sample of spectroscopically confirmed AGN is primarily X-ray and radio selected and is especially sensitive to optically obscured AGN. We couple the multiwavelength spectral energy distribution of our Type 1 and Type 2 AGN along with measurements of their optical emission lines in order to study basic AGN physics. In particular, we estimate black hole masses and bolometric luminosities for ~ 100 Type 1 AGN. Our eventual goal is study of the coevolution of supermassive black holes and their environments with good statistics over most of cosmic time.

1.1.12 your ID: 0124

First Name: Lisa

Last Name: Kewley

Affiliation: University of Hawaii

Title: The host and accretion properties of LINERs and Seyferts in the SDSS

Authors: L. Kewley, B. Groves, G. Kauffmann, T. Heckman

Abstract: We present our new analysis of the host properties of Seyferts and LINERs in the SDSS. We find that at fixed $L/L(\text{EDD})$, all host differences between Seyferts and LINERs disappear. These results and our photoionization models suggest that the Seyfert/LINER dichotomy is analogous to the high/low-state transition for X-ray binaries.

1.1.13 your ID: 0135

First Name: Jong-Hak

Last Name: Woo

Affiliation: University of California at Santa Barbara

Title: Coevolution of Black Holes and Galaxies

Authors: Woo, J.-H.

1.1.14 your ID: 0151

First Name: Ran

Last Name: Wang

Affiliation: Department of Astronomy, Peking University; China

Title: The black hole fundamental plane from a uniform sample of radio and X-ray emitting broad line AGNs

Authors: Ran Wang, Xue-Bing Wu, Min-Zhi Kong

Abstract: We derived the black hole fundamental plane from a uniform AGN sample. We found the fundamental plane relation has a very weak dependence on the blackhole mass, and a tight correlation between the Eddington luminosity scaled X-ray and radio luminosities for the radio quiet subsample. Additionally, the radio quiet and radio loud AGNs have different power-law slopes in the radio-X-ray non-linear relationship.

1.1.15 your ID: 0156

First Name: Cheng

Last Name: Li

Affiliation: Center for Astrophysics, USTC

Title: The clustering of narrow-line AGN in the local Universe

Authors: Cheng Li, Guinevere Kauffmann, Lan Wang, Simon White, Timothy M. Heckman, Y.P.Jing

Abstract: We have analyzed the clustering of $\sim 90,000$ narrow-line AGN drawn from the Data Release 4 (DR4) of the Sloan Digital Sky Survey. Our analysis aims to address the following questions: a) How do the locations of galaxies within the large-scale distribution of dark matter influence ongoing accretion onto their central black holes? b) Is AGN activity triggered by interactions or mergers between galaxies? To answer these questions, we compute the cross-correlation between AGN and a reference sample of galaxies drawn from the DR4. We compare this to the results obtained for control samples of non-AGN that are matched simultaneously in redshift, stellar mass, concentration, velocity dispersion and in mean stellar age, as measured by the 4000 \AA break strength. We also compare near-neighbour counts around AGN and the control galaxies. On scales larger than a few Mpc, AGN have the same clustering amplitude as the control sample. This demonstrates that AGN host galaxies and non-AGN control galaxies populate dark matter halos of similar masses. On scales between 100 kpc and 1 Mpc, AGN are clustered more weakly than the control galaxies. We use mock catalogues constructed from high-resolution N-body simulations to interpret this anti-bias and we show that the observed effect can be easily understood if AGN are preferentially located at the centres of their dark matter halos. On scales less than 30-40 kpc, AGN are clustered more strongly than the control sample, but the effect is weak. When compared to the control sample, we find that only one in a hundred AGN have an extra neighbour within a radius of 30 kpc. This excess does not increase appreciably as a function of the accretion rate onto the black hole. Although interactions may be responsible for triggering nuclear activity in a few AGN, some other mechanism is required to explain the activity seen in the majority of the objects in our sample.

1.1.16 your ID: 0160

First Name: Ding-Xiong

Last Name: Wang

Affiliation: Huazhong University of Science & Technology

Title: EVOLUTION OF LARGER-SCALE MAGNETIC FIELDS AND STATE TRANSITIONS IN BLACK-HOLE X-RAY BINARIES

Authors: DING-XIONG WANG & YONG-CHUN YE

Abstract: The state transitions in black hole X-ray binaries are interpreted based on the evolution of larger-scale magnetic field (MF) configurations. The et line in the hardness-intensity diagram can be determined by the MF evolution.

1.1.17 your ID: 0163

First Name: Shai

Last Name: Kaspi

Affiliation: Tel-Aviv University and Technion

Title: Advances in Reverberation Mapping

Authors: Shai Kaspi

Abstract: The talk will briefly review the reverberation mapping technique which leads to determination of BH masses. It will focus on the emerging relation between the BLR-size and the AGN luminosity, and will overview recent results of reverberation mapping studies which are starting to cover the full range of AGN luminosity.

1.1.18 your ID: 0171

First Name: Jun

Last Name: Tao

Affiliation: Shanghai Astronomical Observatory

Title: Searching for candidates of binary black hole system

Authors: Jun Tao

Abstract: The most direct evidence for a supermassive binary black hole(BBH) can be obtained by detection of the Kepler orbital motion of some emission component close to BHs(Sudou et al. 2003). We propose to observe some BBH candidates, which have evidence both in optical and radio observation, through phase-referencing VLBI observations, to search for direct evidence to confirm the BBHs.

1.1.19 your ID: 0175

First Name: Jonathan

Last Name: Grindlay

Affiliation: Harvard

Title: Hard X-ray Black Hole Surveys in Space and Time

Authors: Jonathan Grindlay, Antonio Copete, and Jaesub Hong

Abstract: Hard X-ray ($> 10 - 100\text{keV}$) surveys for AGN can provide the most complete census of AGN of all types. We report initial results from the added sky coverage enabled by the BAT slew survey (BATSS). Rapid cadence, wide-field HX observations of AGN (and black holes, generally) allow temporal surveys which can constrain BH mass and spin.

1.1.20 your ID: 0176

First Name: Ranga-Ram

Last Name: Chary

Affiliation: Spitzer Science Center

Title: Mid-infrared Spectroscopy of Arp102B: An ADAF and a Torus ?

Authors: R. Chary

Abstract: We present sub arcsec Keck mid-infrared imaging and 5-40 micron Spitzer spectroscopy of the active galactic nucleus in Arp102B. The nucleus of the galaxy is clearly detected as a spatially compact mid-infrared source. The 5 year timeline between the Keck and Spitzer data shows some evidence for variability as well as a change in the spectral energy distribution which might be indicative of a transition from a thin disk to an ADAF. We also detect molecular hydrogen emission that is offset from the systemic velocity of the galaxy by 500-1000 km/s. Since the forbidden lines are at the systemic velocity, we suggest that the molecular hydrogen emission arises from a rotating molecular gas structure at a distance of 1 pc.

1.1.21 your ID: 0180

First Name: Jenny

Last Name: Greene

Affiliation: Princeton

Title: Local Active BH Mass Functions

Authors: Jenny E. Greene, Luis C. Ho

Abstract: While black holes (BHs) are apparently a ubiquitous component of the nuclei of local spheroids, their role in galaxy evolution remains largely unknown. The tight correlations between galaxy spheroid properties and BH mass provides an important boundary condition for models of the coevolution of BHs and galaxies. Here we consider another important boundary condition: the local mass function of broad-line active galaxies. We use standard virial mass estimation techniques to examine the distribution of BH masses and accretion rates for active galaxies in the local universe. Comparisons with local galaxy luminosity functions and star-formation rate distributions allow us to compare average current

growth rates of galaxies and BHs as a function of mass. We also compare the distribution of BH masses in local broad and narrow-line objects, and find that both populations have a characteristic mass of $\sim 10^7 M_\odot$. Most importantly, this is the first BH mass function to consider BH with masses below $10^6 M_\odot$. The space density of this important population allows us to place constraints on potential mechanisms for the creation of seed BHs in the early universe.

1.1.22 your ID: 0139

First Name: Piotr

Last Name: Zycki

Affiliation: Copernicus Astronomical Center

Title: X-ray variability of the Seyfert 2 galaxy NGC 4945

Authors: P. Zycki, M. Mueller, G. Madejski, C. Done, A. Niedzwiecki

Abstract: We developed an improved method of simulating the power density spectra of unevenly sampled lightcurves. The method was then applied to the X-ray emission from the Seyfert 2 galaxy NGC 4945. The source is highly variable on timescale of days despite it being absorbed by a Thomson-thick, presumably extended, absorber. The mass of the central black hole is known ($\approx 10^6$ Solar masses) thanks to observations of megamasers. The inferred PDS is rather harder (relatively more power on short time scales) than the canonical PDS shape observed in Seyfert 1 galaxies. This is contrary to the expected influence of X-ray scattering on PDS, which should reduce the amplitude of high-frequency variability. We discuss whether the intrinsic variability might have been boosted by effects related to high inclination of the X-ray source.

1.1.23 your ID: 0191

First Name: Xinwu

Last Name: Cao

Affiliation: Shanghai Astronomical Observatory, Chinese Academy of Sciences

Title: Growth of massive black holes during radiatively inefficient accretion phases

Authors: Xinwu Cao

Abstract: There is evidence that the growth of massive black holes is mainly through accreting surrounded gases. The massive black holes in most faint active galactic nuclei (AGNs) and even some normal galaxies are still accreting gases, though their accretion rates could be very low. When the accretion rate \dot{m} is lower than the critical value \dot{m}_{crit} ($\dot{m} = \dot{M}/\dot{M}_{\text{Edd}}$), the transition of a standard thin disk to a radiatively inefficient accretion flow (RIAF) is expected to occur. The RIAF is very hot, and it radiates mostly in the hard X-ray band. We derive the black hole mass density as a function of redshift from the hard X-ray luminosity function of AGNs assuming massive black holes grow via accreting surrounded gases. Both

the contributions of bright AGNs and the RIAFs in faint AGNs/normal galaxies to the X-ray background (XRB) are calculated. Comparing with the observed XRB, we find that about 5 per cent of local black hole mass density came from radiatively inefficient accretion phases, if the black holes are spinning rapidly at $a \sim 0.9$.

1.1.24 your ID: 0193

First Name: Anca

Last Name: Constantin

Affiliation: Drexel University

Title: The large scale structure of LINERs and Seyferts and implications for their central engines

Authors: Anca Constantin and Michael Vogeley

Abstract: I will discuss the clustering of the SDSS low-redshift LLAGN, together with a careful examination of the impact of various AGN classification schemes on understanding their clustering properties. I will present evidence that Seyferts are less clustered than LINERs, and that the difference is connected to their central engine properties.

1.1.25 your ID: 0194

First Name: Matthew

Last Name: Malkan

Affiliation: UCLA, Dept of Physics and Astronomy

Title: Black Hole Mass/Galaxy Relations, Near and Far

Authors: Matt Malkan

Abstract: Near-IR spectroscopy with AO has been obtained at Keck for several of the nearest bright Sy1 nuclei, to obtain dynamical estimates of the mass of their central black holes.

The M_{bh}/σ relation at $z = 0.37$ has been measured in Sy1s, and deviates from the local relation. HST/ACS imaging, and spectrophotometric monitoring for reverberation estimate of M_{bh} will be discussed.

The connection between accreting black holes and luminous galaxies is excellent at $z > 0.5$. Evidence from our NICMOS Parallel imaging will be presented.

1.1.26 your ID: 0202

First Name: Julia

Last Name: Lee

Affiliation: Harvard University

Title: The Multiwavelength View of the QSO IRAS13349+2438

Authors: J.C. Lee, G.A. Kriss, S.M. Linder, W.N. Brandt, C.S. Reynolds, P.M. Ogle, S. Kaspi, D.A. Evans

Abstract: We discuss coordinated Chandra HETGS, HST, and optical spectral study of the QSO IRAS 13349+2438 in the context of ionization structure and location of the warm absorber. The high column X-ray study appears best associated with the few hundred km/s UV absorber; UV properties additionally point to unusual dust distributions.

1.1.27 **your ID: 0204**

First Name: Hayden

Last Name: Rampadarath

Affiliation: Physics Department, University of the West Indies St. Augustine

Title: Observations Of The Blazar OJ 287 in 1956-1965: Further Evidence For The Precessing Binary Black Hole Model

Authors: Rampadarath, H., Valtonen, M.J., Saunders, R., Lehto, H.J., Hudec, R., Kroll, P & Innis, J.

Abstract: Digitized photographic plates of the field of OJ 287 were used to fill the gaps in its light curve for the period 1956-1965. The results shows evidence for five outbursts in this period where the brightness in V has risen above 30 mJy. The results agrees with the precessing binary black hole model.

1.1.28 **your ID: 0219**

First Name: Tahir

Last Name: Yaqoob

Affiliation: Johns Hopkins University/ NASA, GSFC

Title: Iron K Line Diagnostics in AGN

Authors: Tahir Yaqoob

Abstract: We review the observational and theoretical situation with respect to Fe K emission line diagnostics of the putative accretion disk and black hole system in AGN, in particular deconvolution of the distant matter and relativistic lines. We also review some future directions.

1.1.29 **your ID: 0222**

First Name: Teddy C.C.

Last Name: Cheung

Affiliation: NRAO and Stanford University

Title: Panchromatic Views of Large-Scale Quasar Jets

Authors: C.C. Cheung

Abstract: Chandra observations have established that X-ray emission is a common feature of large-scale jets in AGN. In the X-ray jets detected on 100s kpc-scales in powerful quasars, canonical synchrotron models do not adequately fit the radio-to-X-ray spectra. In such cases,

a widely applied model is inverse Compton (IC) scattering off CMB photons by relativistic electrons in a highly relativistic jet (Lorentz factors ~ 10). "Non-standard" synchrotron models have also been proposed but no consensus has been reached. I will give an overview of this subject, highlighting results from recent observations with Chandra and Spitzer. Recent results from studies of the highest-redshift ($z \sim 4$) radio/X-ray quasar jets will be presented. The IC/CMB and synchrotron models have strongly diverging predictions for the X-ray emission at such high-redshifts and this is discussed.

1.1.30 your ID: 0228

First Name: Kouji

Last Name: Ohta

Affiliation: Department of Astronomy, Kyoto University

Title: Host galaxies of narrow-line Seyfert 1s

Authors: K. Ohta, K. Aoki, T. Kawaguchi, G. Kiuchi

Abstract: Results of an imaging program of host galaxies of nearby all known 50 NLS1s ($cz < 20000$ km/s, $\text{Dec} > -25$) will be presented. It is found that global bar frequency of NLS1s is higher than those of broad-line Seyfert 1s and normal disk galaxies, confirming the result by Crenshaw et al. (2003).

1.1.31 your ID: 0230

First Name: Richard

Last Name: Green

Affiliation: Large Binocular Telescope Observatory

Title: AGN Science with the Large Synoptic Survey Telescope

Authors: R.F. Green, W.N. Brandt, D.E. Vanden Berk, D.P. Schneider, & P.S. Osmer

Abstract: The LSST, with its unprecedented combination of solid angle, photometric and astrometric accuracy, sensitivity, broad wavelength coverage, and time sampling, will provide a new window into the nature of AGNs. Well-defined, large ($> 10^7$ objects) samples of AGNs at $0 < z < 7$ can be constructed via three approaches: location in color-color space, variability, and lack of proper motion.

1.1.32 your ID: 0231

First Name: Gaku

Last Name: Kiuchi

Affiliation: Department of Astronomy, Kyoto University

Title: Host Galaxies of Hard X-ray Selected Type-2 AGNs at Intermediate Redshifts

Authors: G. Kiuchi, K. Ohta, M. Akiyama, K. Aoki, Y. Ueda

Abstract: Host galaxies of 15 hard X-ray selected type-2 AGNs at $z = 0.1 - 0.6$ (median 0.22) are examined. Thanks to the intrinsic obscuration of a nucleus, spheroid luminosities of the hosts can be derived. We present a black hole mass to spheroid luminosity relation at the redshifts, assuming the Eddington ratio.

1.1.33 your ID: 0240

First Name: Sergei

Last Name: Nayakshin

Affiliation: University of Leicester

Title: Star formation in AGN accretion disks

Authors: Sergei Nayakshin

Abstract: Observations of young massive stars in the central parsec of our Galaxy provide strong evidence for star formation in massive gaseous AGN disks. Observations, theory and simulations of this important process will be discussed. Implications for black hole growth and AGN unification schemes will be speculated about as well.

1.1.34 your ID: 0241

First Name: Sergey

Last Name: Sazonov

Affiliation: Max-Planck Institute for Astrophysics

Title: Unbiased census of nearby AGN by all-sky hard X-ray surveys

Authors: S. Sazonov, M. Revnivtsev, R. Krivonos, E. Churazov, R. Sunyaev

Abstract: Large-area hard X-ray surveys provide an unbiased view of the low- z AGN population. We recently made a survey of the $|b| > 5$ sky at 3-20 keV with RXTE and have now completed the whole sky survey with INTEGRAL at $E > 20$ keV. I will present the AGN luminosity function and NH distribution and discuss the implications for the CXB and growth of SMBHs.

1.1.35 your ID: 0033

First Name: Piero

Last Name: Madau

Affiliation: University of California

Title: On the assembly of supermassive black holes

Authors: Piero Madau

Abstract: ———

1.1.36 your ID: 0115

First Name: Prajval

Last Name: Shastri

Affiliation: Indian Institute of Astrophysics

Title: Different Angles on Active Galaxies: Where are We with Regard to Unification?

Authors: P. Shastri

Abstract: With the realisation that orientation plays a dominant role in the appearance of active galaxies, much of AGN research has been worked into the operating framework of the 'Unified Scheme', wherein all active galaxies fall into three physically distinct classes: radio-quiet, radio-loud Fanaroff-Riley I and radio-loud Fanaroff-Riley II. We will briefly summarise the current understanding on the domain of validity of the scheme, and discuss some of our recent results in this context, as well as a couple of case studies for illustration.

1.1.37 your ID: 0051

First Name: Paola

Last Name: Marziani

Affiliation: INAF – Osservatorio Astronomico di Padova

Title: Is the Baldwin Effect due to Quasar Evolution?

Authors: Paola Marziani

Abstract: Can the “Baldwin Effect” of quasars, i.e. the systematic decrease of equivalent width of high ionization lines with source luminosity, be due to quasar evolution? Following the recent discovery of a strong equivalent-width dependence on Eddington ratio for the high-ionization line of CIV 1549, we consider whether evolution of Eddington ratio with redshift and selection effects can account for the Baldwin relationships.

1.1.38 your ID: 0010

First Name: Elena

Last Name: Jimenez-Bailon

Affiliation: Universidad Roma Tre

Title: X-ray Evidences of Nuclear Activity in Close Pairs of Galaxies

Authors: Elena Jimenez-Bailon

Abstract: It is believed that AGN activity in the local Universe maybe triggered by galaxy interactions. Taking advantage of high resolution X-ray spectroscopy, we have studied the nuclear activity of a sample of galaxy pairs in order to investigate the hypothesis that interactions could activate the quiescent nuclear supermassive black holes.

1.1.39 your ID: 0002

First Name: Stefano

Last Name: Bianchi

Affiliation: ESAC

Title: An XMM-Newton catalog of radio-quiet AGN

Authors: Stefano Bianchi, Matteo Guainazzi, Giorgio Matt, Nuria Fonseca Bonilla

Abstract: Multiwavelength analysis on large samples of AGN provides an excellent tool to understand the physics of these objects. We present the largest catalog of XMM-Newton targeted AGN, all with high SNR X-ray spectra. It includes all the radio-quiet objects observed by XMM-Newton, in targeted observations of the AGN panel, whose data are public as of February 2006, for a total of 116 Type 1 and 67 Type 2 sources. The principal X-ray properties of the catalog are complemented by multiwavelength data found in the literature (optical magnitudes, radio fluxes, H β FWHM, BH masses). We present here results on the correlation of these quantities. In particular, we find convincing evidence for an X-ray Baldwin effect on the narrow component of the Fe K α line, which can in principle provide useful information about the properties of the torus.

1.1.40 your ID: 0213

First Name: Isabel

Last Name: Marquez

Affiliation: Instituto de Astrofísica de Andalucía

Title: X-ray nature of LINER nuclei

Authors: I. Marquez, O. Gonzalez-Martin, J. Masegosa

Abstract: We report the results from an homogeneous analysis of the X-ray (Chandra-ACIS) data available for a sample of 51 LINER galaxies selected from the catalogue by Carrillo et al. (1999) and representative of the population of bright LINER sources. The nuclear X-ray morphology has been classified attending to their nuclear compactness in the hard band (4.5-8.0 keV) into 2 categories: Active Galactic Nuclei (AGN) candidates (with a clearly identified unresolved nuclear source) and Starburst (SB) candidates (without a clear nuclear source). $\sim 60\%$ of the total sample are classified as AGNs, with a median luminosity of $L_X(2-10 \text{ keV}) = 2.5 \times 10^{40} \text{ erg/s}$, which is an order of magnitude higher than that for SB-like nuclei. The spectral fitting allows to conclude that most of the objects need a non-negligible power-law contribution. When no spectral fitting can be performed (data with low signal-to-noise ratio), the Color-Color diagrams allow us to roughly estimate physical parameters such as column density, temperature of the thermal model or spectral index for a power-law and therefore to better constrain the origin of the X-ray emission. All together the X-ray morphology, the spectra and the Color-Color diagrams allow us to conclude that a high percentage of LINER galaxies, at least $\sim 60\%$, could host AGN nuclei, although contributions from High Mass X-ray Binaries or Ultra-luminous X-ray sources cannot be

ruled out for some galaxies.

1.1.41 your ID: 0054

Last Name : Pastorini

First Name: Guia

Affiliation: Dipartimento di Astronomia e Scienza dello Spazio

Title: Black Hole Mass Measurements with Adaptive Optic Assisted 3D-Spectroscopy

Authors: Guia Pastorini, Alessandro Marconi

Abstract: I will present SINFONI/VLT AO-assisted spectroscopy of 5 Seyfert1/QSO with Reverberation Mapping data. We will assess its reliability for BH mass measurements by using gas and stellar kinematics, and investigate whether active galaxies follow MBH-galaxy correlations. I will also discuss kinematics of coronal lines as inferred from our data.

1.1.42 your ID: 0214

First Name: Leo

Last Name: Takalo

Affiliation: Tuorla Observatory

Title: Optical monitoring of TeV-candidate blazars

Authors: L. Takalo, et al.

Abstract: We describe our optical monitoring program on TeV-candidate blazars. These blazars are expected to be observable at GeV-TeV- energies. Our aim in this program is to provide new candidates for MAGIC telescope. Examples of the light curves will be shown.

1.1.43 your ID: 0206

First Name: Dario

Last Name: Trevese

Affiliation: Università di Roma "La Sapienza"

Title: An X-ray and Optical AGN Survey in the Selected Area 57

Authors: Trevese, D., Fiore, F., Puccetti, S., Vagnetti, F., Zitelli, V., Bershadsky, M., Boutsia, K.

Abstract: We present a medium-deep XMM-Newton X-ray survey in the field of SA57. We discuss X-ray properties of low-luminosity AGNs previously selected through their optical variability. Some low-luminosity AGNs, escaping X-ray detection, show anomalously low X-ray to optical ratio.

1.2 Contributed Poster

1.2.1 your ID: 0048

First Name: WeiZhao

Last Name: Shi

Affiliation: Urumqi Observatory, National Astronomical Observatories, Chinese Academy of Sciences

Title: BINARY BLACK HOLE MODEL FOR THE OJ287 PERIODIC OPTICAL AND RADIO OUTBURSTS

Authors: W.Z.Shi

Abstract: Recent observations provide strong evidence for the BL Lacertae object OJ287 exhibiting a periodicity with a double structure in its optical flux variations. Here we suggest a new model, it can not only explain the optical periodicity, but also the radio flares behavior which is double structure and simultaneous with the optical flares. We propose that OJ287 is a binary pair of supermassive black holes.

1.2.2 your ID: 0076

First Name: Kelly

Last Name: Denney

Affiliation: The Ohio State University

Title: New Reverberation Mapping Black Hole Estimate for NGC 4593

Authors: Kelly Denney et al.

Abstract: We present new observations, light curves, and black hole mass estimate for Seyfert-1 NGC4593 from a campaign undertaken in 2005 Spring at MDM Observatory. Reverberation of the broad H_β line in the optical spectrum was targeted, resulting in a time delay and mass with uncertainties greatly reduced from past studies.

1.2.3 your ID: 0126

First Name: Louis-Benoit

Last Name: Desroches

Affiliation: University of California - Berkeley

Title: Multiwavelength Monitoring of NGC 4395: Optical Variability and X-ray/UV/Optical Correlations

Authors: Desroches, L.-B., et al.

Abstract: We present optical photometric and spectroscopic observations of the nucleus of NGC 4395, as part of a multiwavelength reverberation-mapping program. We detect significant continuum variability and interband cross-correlation lags between simultaneous optical/UV and optical/X-ray light curves. We also find suggestive evidence of a Balmer

emission-line lag, yielding a black hole mass measurement which is consistent with the value derived from the simultaneous UV data.

1.2.4 your ID: 0254

First Name: Marek

Last Name: Nikolajuk

Affiliation: University of Bialystok

Title: Black hole masses in NLS1 galaxies from the X-ray excess variance method

Authors: Nikolajuk M., Czerny B., Gurynowicz P.

Abstract:

2 Session–Accretion Disk Chair: A. Laor

- 14:00-14:35 (I) O. Blaes (disk overview)
- 14:35-15:10 (I) S. Mineshige (slim disks, super-Eddington)
- 15:10-15:45 (I) F. Yuan (ADAFs)
- 15:45-16:05 (C) TBD
- **16:05-16:20 Coffee break and posters**
- 16:20-16:55 (I) T. Yaqoob (broad Fe K line diagnostics)
- 16:55-17:30 (I) J. Turner (narrow disk lines)
- 17:30-17:50 (C) TBD
- 17:50-18:25 (I) G. Matt (reprocessing, corona)

2.1 Contributed Oral Reports:

2.1.1 your ID: 0094

First Name: Feng

Last Name: Yuan

Affiliation: Shanghai Astronomical Observatory

Title: Accretion models for low-luminosity AGNs Authors: Feng Yuan

Abstract: I will review our understanding of low-luminosity AGNs in the context of advection-dominated accretion flow model. Special attention will be paid to Sgr A*, the compact radio source located in our Galactic center.

2.1.2 your ID: 0085

First Name: Shengmiao

Last Name: Wu

Affiliation: Center for Astrophysics, University of Science & Technology of China

Title: Iron line profile from relativistic thick accretion disk

Authors: Shengmiao Wu, Tinggui Wang

Abstract: We calculate the iron K α line profile from relativistic accretion disk with finite thickness. We find that the relative height and the separation between the blue and red peaks of the line profile diminish as the thickness of the disk increases. The images of the disk are also investigated.

2.1.3 your ID: 0080

First Name: Tracey Jane

Last Name: Turner

Affiliation: UMBC and NASA/GSFC

Title: Narrow Fe K-shell line emission from the Inner Accretion Disk

Authors: T.J.Turner, L.Miller, J.Reeves

Abstract: XMM, Chandra and Suzaku have recently revealed complex and exciting behaviour in the Fe K-band of Seyfert-type AGN, including the unexpected discovery of narrow components of Fe K emission showing significant Doppler shifts and rapid variability in both flux and peak-energy. A striking result is the discovery of a tight correlation between X-ray continuum flux and that of the ionized component of Fe emission in Mkn 766. Taken together these results provide compelling evidence that there are an important class of narrow Fe emission lines that must originate very close to the central black hole; these offer great diagnostic potential for the inner accretion disk.

2.1.4 your ID: 0075

First Name: Giorgio

Last Name: Matt

Affiliation: Dipartimento di Fisica, Università Roma Tre

Title: X-ray emission and reprocessing in AGN

Authors: Giorgio Matt

Abstract: I will review the properties of the primary X-ray emission in AGN, as well as the reprocessing from the accretion disc, from both the theoretical and observational points of view.

2.1.5 your ID: 0066

First Name: Lance

Last Name: Miller

Affiliation: Oxford University

Title: X-ray reflection from AGN

Authors: L.Miller, T.J.Turner, J.N.Reeves, I.M.George

Abstract: We present analysis of iron-line and X-ray continuum reflection in the new long XMM-Newton observation of Mkn 766 and in other nearby AGN. Iron-line variability demonstrates the existence of ionised reflection close to the black hole, and spectral variability demonstrates the existence of low- and medium-ionisation continuum reflection. These components significantly affect the interpretation of AGN X-ray spectra as well as providing strong evidence for accretion disc reflection.

2.1.6 your ID: 0038

First Name: Luka

Last Name: Popovic

Affiliation: Astronomical Observatory

Title: Investigation of the innermost part of Active Galactic Nuclei by gravitational microlensing

Authors: L. C. Popovic, P. Jovanovic, T. Petrovic

Abstract: Gravitational microlensing can be a very useful tool for investigation of the unresolved central part of lensed quasars (X-ray region, continuum source and broad line region). Gravitational lensing is in general achromatic, however, the wavelength-dependent geometry of the different emission regions of lensed quasars may result in chromatic effects. Since sizes of the emitting regions are wavelength-dependent, microlensing by stars in the lens galaxy will lead to a wavelength-dependent magnification (Popovic & Chartas 2005, MNRAS, 357, 135). This can be used in the investigation of the size and geometry of emission regions (see e.g. Popovic et al. 2001, A&A, 378, 295; Abajas et al. 2002, ApJ, 576, 640; Popovic et al. 2003, A&A, 398, 975; Popovic et al. 2006, ApJ, 637, 620). Here we will discuss the influence of gravitational microlensing on the spectra of lensed quasars, and possible usage of this to investigate the innermost part of quasars.

2.1.7 (withdrawn) your ID: 0007

First Name: David

Last Name: Meier

Affiliation: JPL/Caltech

Title: Magnetically-Dominated Accretion Flows and the Production of Radio Jets

Authors: David L. Meier

Abstract: —

2.1.8 your ID: 0006

First Name: pierre-olivier

Last Name: petrucci

Affiliation: LAOG

Title: The puzzling spectral and temporal behavior of Mkn 841

Authors: Petrucci, Matt, Ponti, Maraschi, Nandra, Mouchet, Boisson, Cappi, Longinotti

Abstract: A strong soft excess and a complex iron line profile are known to be present in Mkn 841 since a long time. We present a detailed analysis of XMM-Newton observations revealing their extreme and puzzling spectral/temporal behaviors. We also discuss the clear detection of a highly redshifted line at 4.8keV, potential signature of a massive kerr BH.

2.1.9 your ID: 0131

First Name: Makoto

Last Name: Kishimoto

Affiliation: University of Edinburgh

Title: The near-IR shape of the Big Blue Bump: under the hot dust emission

Authors: Makoto Kishimoto, Robert Antonucci, Omer Blaes

Abstract: The spectral shape of the Big Blue Bump in the near-IR is very important theoretically, but essentially buried under the strong hot dust emission. I will present the near-IR polarimetry results to reveal the spectral shape for the first time. I will discuss the results in terms of a robust bare-disk prediction and the effect of self-gravity in the outer part of the disk.

2.1.10 your ID: 0134

First Name: Yuichi

Last Name: Terashima

Affiliation: Ehime Univ.

Title: Broad band X-ray variability of AGN with Suzaku

Authors: Yuichi Terashima

Abstract: We present broad band X-ray spectra and their variability of AGNs observed with Suzaku. Suzaku's sensitivity up to 50 keV enables us to perform time resolved broad band spectroscopy of many AGNs. We decompose several emission components in AGNs (power law continuum, reflection continuum, Fe-K line, etc) by using variability.

2.1.11 your ID: 0147

First Name: Shin

Last Name: Mineshige

Affiliation: Yukawa Institute, Kyoto University

Title: Super-Critical Accretion Flow

Authors: Shin Mineshige

Abstract: Theory of super-critical accretion flow is overviewed in relation to observations. The main topics include multi-dimensional photon trapping effects, high-velocity outflows, anisotropic radiation fields, and possible observational signatures.

2.1.12 your ID: 0153

First Name: Gerard

Last Name: Kriss

Affiliation: STScI

Title: The Far-Ultraviolet Continua of AGN and Quasars

Authors: G. Kriss & the FUSE AGN Working Group

Abstract: Far-ultraviolet observations of a large sample of AGN with FUSE (over 100 AGN with $z < 0.15$) are illuminating our understanding of the continuum production process in AGN. These observations, primarily of low-luminosity AGN, in comparison to HST observations of higher-redshift, higher-luminosity AGN, show that the lower-luminosity FUSE sample is significantly bluer. In addition, in contrast to earlier work on the shape of quasar continua (Zheng et al. 1997; Telfer et al. 2002), the FUSE composite does not show a change in slope, or break, in the spectral range surrounding the intrinsic Lyman limit. Detailed spectra of individual objects obtained using FUSE, HST, and ground-based observations show a variety of spectral shapes, most with no breaks (as seen in the composite), but some with spectral breaks. We argue that these results are a natural consequence of the hotter accretion disks expected to surround the lower-mass black holes of lower-luminosity AGN—the hotter disks result in harder spectra, and, since the peak of the disk spectrum has moved to shorter wavelengths, there is no spectral break. Unfortunately, our sample size is too small to see any correlation of spectral morphology with luminosity or the inferred black-hole mass.

2.1.13 your ID: 0174

First Name: Rene

Last Name: Goosmann

Affiliation: Center of Theoretical Astrophysics, Astronomical Institute of the Academy of Sciences

Title: X-ray variability in Active Galactic Nuclei: implications of magnetic flares

Authors: R. W. Goosmann, B. Czerny, M. Mouchet, V. Karas, M. Dovciak, G. Ponti, A. Rozanska, Anne-Marie Dumont

Abstract: We model the energy-dependent fractional variability amplitude of the Seyfert galaxy MCG-6-30-15 using Monte-Carlo simulations of flare distributions co-rotating with the accretion disk. The observed variability across the iron K α line can be reproduced. We also investigate time delays between hard and soft X-rays for an individual strong flare event.

2.1.14 your ID: 0192

First Name: Steffen

Last Name: Brinkmann

Affiliation: Landessternwarte, ZAH, University of Heidelberg

Title: Radiatively Cooled Accretion Discs

Authors: Steffen Brinkmann

Abstract: The inner hot accretion torus around a black hole has been simulated globally with a conservative, non-relativistic MHD-code (PLUTO). Additionally, optically thin cooling has been implemented in order to analyse the effect of radiative losses on the global structure of the accretion flow, including turbulent behaviour, winds etc.

2.1.15 your ID: 0200

First Name: Francesca

Last Name: Panessa

Affiliation: IFCA

Title: Are LLAGN a scaled-down version of luminous AGN?

Authors: F. Panessa

Abstract: We investigated the correlations between X-ray, optical and radio luminosities for a sample of low luminosity Seyfert galaxies. The observed radiative output combined with black hole mass estimates, allowed us to measure the Eddington ratios and, therefore investigate the fundamental scaling of the radiative processes with black hole mass and accretion rate.

2.1.16 your ID: 0218

First Name: Agata

Last Name: Rozanska

Affiliation: N. Copernicus Astronomical Center

Title: Accretion disc atmospheres: Soft X-ray excess and Compton Shoulder

Authors: Agata Rozanska and Jerzy Madej

Abstract: We present spectra from an AGN accretion disc atmosphere illuminated by X-ray continuum. We compute full radiative transfer including Compton scattering and the final spectrum is integrated over all annuli. Our model puts constraints on the Soft X-ray excess, an iron lines and the Compton Shoulder emitted from the disc.

2.1.17 your ID: 0243

First Name: Omer

Last Name: Blaes

Affiliation: University of California, Santa Barbara

Title: Accretion Disks in AGN

Authors: Omer Blaes

Abstract: I will review the status of accretion disk models of AGN, focusing on recent developments. These include spectropolarimetric observations of Balmer absorption edges and the shape of the putative disk continuum in the infrared, and breakthroughs in our understanding of how magnetorotational turbulence modifies conditions in the disk atmosphere.

2.1.18 your ID: 0244

First Name: Yi

Last Name: Liu

Affiliation: Shanghai Astronomical Observatory Chinese Academy of Sciences

Title: The Jet Power, Radio Loudness, and Black Hole Mass in Radio-loud Active Galactic Nuclei

Authors: Liu, Yi; Jiang, Dong Rong; Gu, Min Feng

Abstract: Jet formation is thought to be closely connected with the mass of the central supermassive black hole in active galactic nuclei. The radio luminosity commonly used in investigating this issue is merely an indirect measure of the energy transported through the jets from the central engine and is severely Doppler boosted in core-dominated radio quasars. In this work, we investigate the relationship between the jet power and the black hole mass, by estimating the jet power using extrapolated extended 151 MHz flux density from the VLA 5 GHz extended radio emission, for a sample of 146 radio-loud quasars compiled from the literature. After removing the effect of relativistic beaming in the radio and optical emission, we find a significant intrinsic correlation between the jet power and the black hole mass. It strongly implies that the jet power, like jet formation, is closely connected with the black hole mass. To eliminate the beaming effect in the conventional radio loudness, we define a new radio loudness as the ratio of the radio extended luminosity to the optical luminosity estimated from the broad-line luminosity. In a tentatively combined sample of radio-quiet with our radio-loud quasars, the apparent gap around the conventional radio loudness $R = 10$ is not prominent for the new-defined radio loudness. In this combined sample, we find a significant correlation between the black hole mass and new-defined radio

loudness.

2.2 Contributed Posters:

2.2.1 your ID: 0141

First Name: Helene

Last Name: Flohic

Affiliation: Pennsylvania State University

Title: Interpreting the variability of double-peaked emission lines using models for accretion disk structures

Authors: Flohic, H., Eracleous, M.

Abstract: We create accretion disk emissivity functions for a variety of disk structures and compute the double-peaked emission line profile that would be observed from such disks in AGNs. We then compare the computed line profiles and their variability as the structure rotates to data that were collected over several decades.

2.2.2 your ID: 0034

First Name: Surajit

Last Name: Dasgupta

Affiliation: Tata Institute of Fundamental Research

Title: Evidence for Comptonization in the Seyfert Galaxy Mrk 110

Authors: Surajit Dasgupta, A. R. Rao

Abstract: We report the discovery of hard X-ray time lags in the X-ray emission of the Seyfert 1 galaxy Mrk 110, based on a long XMM-Newton observation. Cross correlation between the X-ray light curves of different energy bands reveals an energy depended delay ranging from a few minutes to an hour. We find that the energy spectrum can be modeled by Comptonization of disk blackbody photons, with very strong evidence for the presence of non-thermal electrons in the Comptonizing plasma. This conclusion is strengthened by the inclusion of RXTE-PCA data upto 20 keV. We find that the energy dependent delay can be modeled as due to the effect of Comptonization in a hot plasma confined within 10 Schwarzschild radius of the black hole. We discuss our results in the context of inverse Comptonization of the soft photons by highly energetic hybrid (thermal/non-thermal) plasma.

3 Session—Jets Chair: O. Blaes

- 09:00-09:35 (I) P. Uttley (X-ray variability)
- 09:35-10:10 (I) S. Wagner (high-energy gamma-ray studies)

- 10:10-10:45 (I) M. Boettcher (multiwavelength)
- 10:45-11:00 Coffee break and posters
- 11:00-11:20 (C) TBD
- 11:20-11:40 (C) TBD
- 11:40-12:15 (I) J.-M. Wang (disk-jet connection)

3.1 Contributed Oral Reports:

3.1.1 your ID: 0020

First Name: JINMING

Last Name: BAI

Affiliation: Yunnan Astronomical Observatory, CAS, China

Title: Possible gamma-ray emission in 3C 345

Authors: J.M. Bai, X.H. Zhao, Y.H. Zhang

Abstract:——

3.1.2 your ID: 0031

First Name: S.-W.

Last Name: Feng

Affiliation: Shanghai Astronomical Observatory

Title: A BENDING JET IN A GAMMA-RAY BRIGHT BLAZAR NRAO 530

Authors: S.-W. Feng, Z.-Q. Shen

Abstract: We report on VLBA observations of a Gamma-ray bright blazar NRAO 530 at multiple frequencies. These multi-epoch multi-frequency high-resolution VLBI images exhibit a bending jet to the north of the compact core. Equipartition Doppler-factors of components A, B and C are consistent with a larger flux density in component B, the non-detection of proper motion in component C and a bent jet. We will also present high-resolution polarimetric VLBI images of NRAO 530 made in 1997.

3.1.3 your ID: 0096

First Name: Markus

Last Name: Boettcher

Affiliation: Ohio University

Title: Broadband Spectral Properties of Blazars

Authors: Markus Boettcher

Abstract: In this review, I will first present a general overview of the phenomenology of blazars, including results from recent multiwavelength observing campaigns on 3C66A and 3C279. Subsequently, I will address issues of modeling broadband spectra, with particular emphasis on the point that spectral information alone is not sufficient to distinguish between competing models and to constrain essential parameters, in particular related to the primary particle acceleration and radiation mechanisms in the jet. Short-term spectral variability information may help to break such model degeneracies, which will require snap-shot spectral information on intraday time scales, which may soon be achievable for many blazars even in the gamma-ray regime with the upcoming GLAST mission and current advances in Atmospheric Cherenkov Telescope technology.

3.1.4 your ID: 0100

First Name: Laura

Last Name: Maraschi

Affiliation: Brera Astronomical Observatory - INAF

Title: Jet properties at different scales

Authors: L. Maraschi & F. Tavecchio

Abstract: The CHANDRA discovery of X-ray emission from extragalactic relativistic jets at large distances from the nucleus is one of the most important recent results in this field. The multifrequency observational results obtained from our survey and following observations (Sambruna et al. 2004, 2005) will be summarized and discussed in the light of theoretical models for the emission mechanisms (Tavecchio et al. 2000, 2004). The scenario envisaged (Tavecchio et al. 2006) suggests that powerful jets propagate freely over large scales and decelerate close to their terminal hot spots possibly due to entrainment.

3.1.5 your ID: 0103

First Name: Jian-Min

Last Name: Wang

Affiliation: Institute of High Energy Physics

Title: Jet-disk connection in active galactic nuclei

Authors:

Abstract:

3.1.6 your ID: 0107

First Name: Dharam Vir

Last Name: Lal

Affiliation: Institute of Astronomy & Astrophysics, Academia Sinica

Title: The radio properties of Type II quasars

Authors: Dharam Vir Lal and Luis C. Ho

Abstract: Quasars (of type I) are the luminous analogs of type I Seyfert galaxies. Within the framework of unified models of active galaxies, the population of quasars of type II recently discovered with Sloan Digital Sky Survey are the luminous analogs of type II Seyfert galaxies. In quasars (of type I) we are looking down the jet (also called as the pole-on view), whereas in quasars of type II we are viewing the jet broadside (also called as the edge-on view). Since, our knowledge and understanding of the radio properties of these type II quasars is very limited, we will present our, first results from recently scheduled observations, preliminary observational radio properties of these sources and test the predictions of unification scheme models. We will also compare the radio properties of type I and II quasars with the radio properties of Seyfert (radio-quiet) and radio (radio-loud) galaxies, thereby compare the radio jets of other AGNs with the radio jets of type I I quasars.

3.1.7 your ID: 0092

First Name: Dan

Last Name: Schwartz

Affiliation: Smithsonian Astrophysical Observatory

Title: Quasar Jets at Large Redshift

Authors: Dan Schwartz

Abstract: X-ray jets in quasars at redshifts greater than 1 should become increasingly prominent due to the increase of the cosmic microwave background (CMB) energy density. Although we do not so far have direct examples of such systems, I will argue that observations to date are still fully consistent with the picture in which the X-ray emission is due to inverse Compton scattering on the CMB.

3.1.8 your ID: 0121

First Name: Masanori

Last Name: Nakamura

Affiliation: LANL

Title: Structure of Magnetic Tower Jets in Large Scales

Authors: Masanori Nakamura & Hui Li

Abstract: Magnetic Tower jets propagating over kpc scales have been examined by using three-dimensional MHD simulations. Of particular interest is to investigate the dynamical behaviors of current-carrying Poynting flux-dominated towers, which possess the tightly wound helical field, in terms of the collimation and stability property.

3.1.9 your ID: 0125

First Name: Matthew

Last Name: Lister

Affiliation: Purdue University

Title: Structure and Evolution of AGN Jets

Authors: M. Lister

Abstract: MOJAVE is a long term VLBA program to investigate the structural and polarization evolution of parsec-scale radio jets associated with AGN. The sample is complete with respect to beamed jet emission, and is providing important information on the Doppler factors, magnetic fields, and compactness of over 100 of the brightest AGN in the northern sky. We discuss recent findings regarding nozzle precession, polarization, and Faraday plasma effects in AGN jets, as well as the intrinsic jet speeds and luminosity function of the blazar parent population.

3.1.10 your ID: 0137

First Name: Paola

Last Name: Grandi

Affiliation: IASF-INAF

Title: Jet and Accretion Flow untangled in Powerful Radio Loud AGNs

Authors: Paola Grandi

Abstract: I discuss a diagnostic tool for disentangling non-thermal (jet) and thermal (accretion flow) emission in powerful Radio Loud AGN. This method applied to X-ray observations of 3 Broad Line Radio Galaxies shows that the jet is generally overwhelmed by the accretion flow by a factor 0.4 or more.

3.1.11 your ID: 0138

First Name: Leonid

Last Name: Gurvits

Affiliation: Joint Institute for VLBI in Europe

Title: Radio surveys of compact structures in AGN: going deeper, getting sharper

Authors: L.I. Gurvits

Abstract: An overview of statistical properties of milliarcsecond-scale radio structures AGN will be given based on recent VLBI surveys, such as the pilot Deep Extragalactic VLBI-Optical Survey (DEVOS) and the recently completed VSOP Survey. The studies allow us to estimate physical parameters of jets and their relations to the central engine parameters.

3.1.12 your ID: 0150

First Name: Rodrigo

Last Name: Nemmen

Affiliation: Instituto de Fisica - UFRGS

Title: Models for jet power in elliptical galaxies: evidence for rapidly spinning black holes

Authors: Rodrigo S. Nemmen, Thaisa Storchi-Bergmann, Richard G. Bower, Arif Babul

Abstract: We employ two models of powering of outflows from ADAF-fed black holes (including the Blandford-Znajek mechanism) to understand the tight correlation between the accretion rates and jet powers of X-ray luminous elliptical galaxies (Allen et al. 2006). We find that nearly maximally spinning holes are needed to account for the above correlation.

3.1.13 your ID: 0157

First Name: Stefan

Last Name: Wagner

Affiliation: LSW Heidelberg

Title: High-Energy Gamma-Ray studies of AGN

Authors: Stefan Wagner

Abstract: AGN emit photons up to very high energies. Rapid variability suggests that most of this emission originates in jets. Observations in the GeV and TeV regime probe the emission processes and acceleration mechanisms up to the highest energies. Recent results from TeV experiments will be reviewed and compared to predictions.

3.1.14 your ID: 0161

First Name: Stefanie

Last Name: Komossa

Affiliation: Max-Planck-Institut fuer extraterrestrische Physik

Title: Radio-loud Narrow-line Seyfert 1 Galaxies

Authors: S. Komossa, et al.

Abstract: We present our results on the first systematic search for (non-radioselected) radio-loud narrow-line Seyfert 1 galaxies. We study the multiwavelength properties of these objects and discuss implications for models of narrow-line Seyfert 1 type galaxies, accretion modes in these objects, and the radio-loud radio-quiet dichotomy of AGN.

3.1.15 your ID: 0179

First Name: Edison

Last Name: Liang

Affiliation: Rice University

Title: Particle Acceleration and Radiation in Electromagnetic Jets and Collisionless Shocks

Authors: Edison Liang and Koichi Noguchi

Abstract: We summarize latest computer simulations of particle acceleration and radiation mechanisms by both electromagnetic-driven jets and collisionless shocks, using 3D particle-in-cell codes with radiation. We show how spectra, polarization and variability depend on magnetic field, Lorentz factor, pair loading and density. and discuss their applications to AGN data.

3.1.16 your ID: 0183

First Name: Phil

Last Name: Uttley

Affiliation: Anton Pannekoek Institute, University of Amsterdam

Title: AGN X-ray Variability: origin and implications for grand unification´

Authors: Phil Uttley

Abstract: Recent years have seen huge progress in our understanding of X-ray variability in radio-quiet AGN, especially through the remarkable similarities with X-ray variability of stellar-mass black holes. A picture is emerging where AGN X-ray variability is driven by a fluctuating accretion flow, offering the chance to use X-ray timing to probe accretion close to the black hole, and map the X-ray emitting region. The variability properties may also offer a diagnostic of the accretion states of AGN - the latest evidence suggests that AGN show the same variety of states seen in stellar mass black holes, which has strong implications for AGN grand unification models.

3.1.17 your ID: 0190

First Name: Minfeng

Last Name: Gu

Affiliation: Shanghai Astronomical Observatory

Title: The Kinetic Luminosity of Radio Jets in Active Galactic Nuclei

Authors: Gu, M.F., Cao, X.W., Jiang, D.R.

Abstract: Based on the Königl's inhomogeneous jet model, we estimate the jet parameters, such as bulk Lorentz factor Γ , viewing angle θ and electron number density n_e from radio VLBI and X-ray data for a sample of active galactic nuclei (AGNs). The kinetic luminosity of jets is then calculated using the derived jet parameters. We find a strong correlation between the total luminosity of broad emission lines and the kinetic luminosity of the jets. This result supports the scenario that the accretion process are tightly linked with the radio jets, though how the disk and jet are coupled is not revealed by present correlation analysis.

Moreover, we find a significant correlation between the kinetic luminosity and radio extended luminosity. This implies that the emission from the radio lobes are closely related with the energy flux transported through jets from the central part of AGNs.

3.1.18 your ID: 0197

First Name: Robert

Last Name: Zavala

Affiliation: U.S. Naval Observatory

Title: Helical Magnetic Fields in the jet of 3C 273

Authors: R. T. Zavala & G. B. Taylor

Abstract: Using the VLBA we confirm the presence of a Faraday rotation measure gradient transverse to the jet axis of 3C 273. A rotation measure gradient is expected to be the signature of a helical magnetic field wrapping around the relativistic jet.

3.1.19 your ID: 0208

First Name: Paolo

Last Name: Padovani

Affiliation: European Southern Observatory

Title: Radio number counts, evolution, and luminosity functions of blazars

Authors: P. Padovani, P. Giommi, H. Landt, E. Perlman

Abstract: We present the faintest blazar sample currently available, based on the DXRBS, which includes 129 flat-spectrum radio quasars and 24 BL Lacs down to radio fluxes and powers more than ~ 10 times fainter than published blazar samples. Our results constrain blazar evolution, unified schemes, and the so-called blazar sequence:

3.1.20 your ID: 0223

First Name: Nozomu

Last Name: Kawakatu

Affiliation: National Observatory of Japan

Title: Dynamical evolution of hot spots in radio loud AGNs

Authors: Nozomu Kawakatu and Motoki Kino

Abstract: We model a new dynamical evolution of hot spots connected with cocoon dynamics. By the detailed comparison with two dimensional relativistic hydrodynamic simulations, we show that our model well reproduces the whole evolution of relativistic jets. On the basis of this, I will discuss evolutionary tracks of radio loud AGNs.

3.1.21 your ID: 0229

First Name: PREETI

Last Name: KHARB

Affiliation: ROCHESTER INSTITUTE OF TECHNOLOGY

Title: The Complex Radio Morphology of Markarian 6

Authors: Kharb, P., O'Dea, C., Baum, S., Colbert, E. and Xu, C.

Abstract: We have carried out an extensive radio study on the Seyfert galaxy Mrk6 and imaged a spectacular radio structure consisting of twin bubble-like structures and a radio jet, in the source. To explain the complex morphology, we invoke a model of an episodically-powered precessing jet that changes orientation. This model explains the complicated radio morphology, the spectral index and polarization structure, and also presents an interesting implication for Seyfert activity in general. Radio emission in this scenario is a short-lived phenomenon in the lifetime of a Seyfert galaxy, which results due to an accretion event.

3.1.22 your ID: 0232

First Name: You-Hong

Last Name: Zhang

Affiliation: Tsinghua University

Title: Multiwavelength variability of TeV Blazars with XMM-Newton

Authors: Zhang You-Hong

Abstract: We present optical-UV and X-ray variability of TeV Blazars performed with XMM-Newton.

3.1.23 your ID: 0233

First Name: Jianghua

Last Name: Wu

Affiliation: National Astronomical Observatories, CAS

Title: Optical Monitoring of S5 0716+714 with a Multi-Passband Filter

Authors: Wu, J., Zhou, X. et al.

Abstract: The BL Lac object S5 0716+714 was monitored with a multi-passband filter, which enables light in multi-passbands to pass through it simultaneously. The object shows bluer colors when it is more active. It follows a clockwise loop path on the color versus magnitude diagram, which is consistent with the theoretical prediction.

3.1.24 your ID: 0238

First Name: Elina

Last Name: Lindfors

Affiliation: Tuorla Observatory

Title: Synchrotron flaring in galactic and extragalactic jets

Authors: E. J. Lindfors, M. Turler

Abstract: We study the synchrotron flaring behaviour of the blazar 3C 279 and microquasar Cyg X-3. The properties of a typical outburst are derived from the observations by decomposing multifrequency lightcurves into series of self-similar events. We compare the sources and look into the similarities and differences in flaring behaviour of the galactic and extragalactic jets.

3.1.25 your ID: 0142

First Name: Dhruva J.

Last Name: Saikia

Affiliation: NCRA, Tata Institute of Fundamental Research

Title: Episodic activity in radio galaxies

Authors: D.J. Saikia, C. Konar, M. Jamrozy and J. Machalski

Abstract: An important issue concerning active galaxies is the duration of their AGN phase and whether such periods of activity are episodic. We present the results of our study of double-double radio galaxies, which are striking examples of episodic jet activity.

3.1.26 your ID: 0260

First Name: Xiang

Last Name: Liu

Affiliation: Urumqi Observatory, NAOC

Title: VLBI observations of GHz Peaked Spectrum radio sources

Authors: Xiang Liu

Abstract: We report the results of VLBI observations of GHz-Peaked-Spectrum (GPS) radio sources at 1.6 GHz. We aimed at finding young extragalactic radio sources and exploring the spectral property of the GPS sources.

3.2 Contributed Posters:

3.2.1 your ID: 0118

First Name: Giulia

Last Name: Migliori

Affiliation: INAF-IASF Bologna

Title: Pictor A: from parsec to kiloparsec

Authors: G. Migliori, P. Grandi, G.G.C. Palumbo et al.

Abstract: We present a complete X-ray study of the radio galaxy Pictor A based on a new XMM-Newton observation. We investigate the compact and the extended regions, i.e. nucleus, jet, hot spots and lobes. In particular we show, for the first time, an X-ray spatially resolved study of the radio lobes. We discuss the physical processes which take place in each component, searching for a comprehensive picture which explains how the different structures are connected.

3.2.2 your ID: 0247

First Name: Dimitrios

Last Name: Emmanoulopoulos

Affiliation: ZAH, Landessternwarte

Title: Higher Order Time Series Analysis of Mrk 421

Authors: D.Emmanoulopoulos, S.J.Wagner

Abstract: We have analyzed all the archival RXTE data of Mrk 421 taken from the PCA. After homogenized them we performed a higher-order time series analysis in order to characterize the dynamical properties of the emission mechanism. We find a strong indication of genuine non-stationarity in the radiation process.

4 Session—Winds, Outflows Chair: F. Hamann

- 14:00-14:35 (I) D. Proga (theory)
- 14:35-15:10 (I) D. Chelouge (observations)
- 15:10-15:45 (I) J. Reeves (relativistic outflows)
- 15:45-16:05 (C) TBD
- 16:05-16:20 Coffee break and posters
- 16:20-16:55 S. Gallagher (X-ray BALs)
- 16:55-17:15 (C) TBD
- 17:15-17:35 (C) TBD
- 17:35-18:10 D. Crenshaw (UV/warm absorbers)
- 18:10-18:30 (C) TBD

4.1 Contributed Oral Reports:

4.1.1 (replace) your ID: 0018

First Name: Suzy

Last Name: Collin(scientific name) Zahn(real name)

Affiliation: Observatoire de Paris-Meudon

Title: Absorption versus reflection models for the soft X-ray excess in AGN

Authors: L. Chevallier, S. Collin, B. Czerny, A.-M. Dumont, A. Goncalves, M. Mouchet

Abstract: We discuss the possibility that the soft X-ray excess is an artefact due to the absorption of a primary power law by a relativistic wind. We show that this model implies that the absorption medium is in pressure equilibrium, to constrain the the spectral distribution. A reflection model absorbed by a modest relativistic wind seems also a good solution.

4.1.2 your ID: 0035

First Name: Raffaella

Last Name: Morganti

Affiliation: ASTRON

Title: Fast neutral outflows: a major source of feedback

Authors: Morganti, Oosterloo, Tadhunter

Abstract: Fast ($\sim 1000\text{km/s}$) outflows of neutral gas (from 21-cm HI absorption) are detected in strong radio sources. The outflows likely originate from the interactions between radio jets and the medium and have mass outflow rates comparable to starburst-driven superwinds. The impact on the evolution of the host galaxies is discussed.

4.1.3 your ID: 0044

First Name: Alberto

Last Name: Rodriguez-Ardila

Affiliation: Laboratorio Nacional de Astrofisica

Title: Outflows of highly ionized gas in the center of Seyfert galaxies: kinematics and physical conditions

Authors: A. Rodriguez-Ardila, A. Prieto, S. M. Viegas, R. Gruenwald

Abstract: We report on the discovery of double peak structure in the coronal lines of NGC1068. The velocity curve of each peak component shows some trend of increasing velocity with distance from the center albeit with a rather irregular pattern. Outflows of highly ionized gas are proposed to explain the observations.

4.1.4 your ID: 0083

First Name: MARTIN

Last Name: WARD

Affiliation: UNIVERSITY OF DURHAM

Title: Diagnostics of Outflows

Authors: Martin Ward

Abstract: AGN outflows are inferred from various evidence; X-rays, UV absorption, emission line shifts and profiles. We use the presence and properties of coronal emission lines to investigate links between these different signatures and components such as the accretion disc and torus, with an interpretation in the context of outflow models.

4.1.5 your ID: 0091

First Name: Neeraj

Last Name: Gupta

Affiliation: NCRA-TIFR

Title: Results of an associated HI absorption search towards the cores of radio galaxies using GMRT

Authors: Neeraj Gupta, D.J. Saikia

Abstract: We compare systematically the occurrence of HI absorption in compact and larger objects, study its distribution and evolution of properties with source age. These results along with the recently discovered 21-cm absorption towards the core of radio galaxy 3C452 will be discussed in the light of observations at other wavelengths.

4.1.6 your ID: 0093

First Name: D. Michael

Last Name: Crenshaw

Affiliation: Georgia State University

Title: Mass Outflows from Seyfert Galaxies as Seen in Emission and Absorption

Authors: D.M. Crenshaw and S.B. Kraemer

Abstract: We summarize the observational properties of the outflowing UV/X-ray absorbers in Seyfert galaxies and the constraints that they impose on dynamical models, including accretion-disk winds. We examine recent evidence that the absorbers have been detected in emission, and discuss the implications of these results for determining the nature of the mass outflows.

4.1.7 your ID: 0095

First Name: Patrick

Last Name: Hall

Affiliation: York University

Title: Blueshifted Emission and Absorption in SDSS Quasars

Authors: Patrick Hall, SDSS Quasar Survey Team

Abstract: I will discuss our studies of Sloan Digital Sky Survey quasars which exhibit broad, blueshifted absorption. I will also discuss recent work on interpreting the range of blueshifts seen in the broad emission line profiles of quasars.

4.1.8 your ID: 0181

First Name: Tinggui

Last Name: Wang

Affiliation: University of Science and Technology of China

Title: Dense outflow from the type II QSO SDSS J132419.88+053704.7

Authors: T. Wang

Abstract: We will present the result of a detailed analysis of UV and optical emission line spectrum as well as the broad band continuum of the type II QSO SDSS J132419.88+053704.7. Three outflow components are identified. UV diagnostics suggests surprising high density for two broad components. Both young and intermediate age stellar population is heavily reddened while the broad components are not. We will discuss the implication of these results.

4.1.9 your ID: 0185

First Name: Aoki

Last Name: Kentaro

Affiliation: Subaru Telescope, NAOJ

Title: Balmer absorption lines in FeLoBALs

Authors: Kentaro Aoki

Abstract: I will report that the discovery of non-stellar Balmer absorption lines in two FeLoBALs by near-infrared spectroscopy with CISCO attached with the Subaru 8.2-m telescope. Our discovery is the first non-stellar Balmer absorption lines among quasars.

4.1.10 your ID: 0186

First Name: Paola

Last Name: Rodriguez Hidalgo

Affiliation: University of Florida

Title: High Velocity Outflows in Quasars

Authors: Paola Rodriguez Hidalgo, Fred Hamann, Daniel Nestor & Joseph Shields

Abstract: High-velocity quasar outflows might be essential for regulating star formation and facilitating accretion onto the central black hole of QSOs. We have analyzed 1,700 SDSS spectra to study the incidence of CIV outflows with $v > 10000$ km/s but small velocity dispersions, which present challenges to theoretical models. We also discuss new observations that constrain the location and physical nature of these flows

4.1.11 **your ID: 0198**

First Name: Daniel

Last Name: Nestor

Affiliation: Institute of Astronomy, University of Cambridge

Title: Outflows and Narrow-line UV Absorbers: Incidence, Velocity Distribution and Line-Locking

Authors: Daniel Nestor, Fred Hamann, Paola Rodriguez Hidalgo

Abstract: Ubiquitous in QSO spectra, narrow absorbers are under-studied due to their ambiguous (intrinsic or intervening) natures. Using SDSS, we discern velocity-space distributions of CIV absorbers, measure the excess over assumed non-outflow contributions (thereby determining the minimum intrinsic fraction) and measure velocity-clustering to determine if the putative radiative line-locking phenomenon is real.

4.1.12 **your ID: 0210**

First Name: Susmita

Last Name: Chakravorty

Affiliation: IUCAA (Inter University Centre for Astronomy and Astrophysics), India

Title: Warm absorbers : Stability curve analysis

Authors: Susmita Chakravorty, Ajit Kembhavi, Martin Elvis, Gary Ferland

Abstract: Thermal equilibrium curves characterising the stability of warm absorbers in AGN have been studied for different ionising continuum shapes and chemical abundances using CLOUDY. Nature of this curve is affected by a number of factors particularly the dielectronic recombination coefficients. The absorber can have continuous pressure distribution or multiphase nature.

4.1.13 **your ID: 0239**

First Name: Doron

Last Name: Chelouche

Affiliation: Institute for Advanced Study

Title: Flow Physics as Revealed by Observations

Authors:

Abstract:

4.2 Contributed Posters:

4.2.1 your ID: 0088

First Name: Rajib

Last Name: Ganguly

Affiliation: University of Wyoming

Title: Quasar-Intrinsic Absorbers in the Hubble Space Telescope Archive

Authors: Rajib Ganguly, Toru Misawa, Melanie Hawthorn, Catherine Grier, Ryan Lynch, Jane Charlton, Michael Eracleous

Abstract: We present a catalog of intrinsic absorption-line systems found in the Hubble Space Telescope Archive. The absorbers presented show at least one of the following properties: time-variability, partial coverage, velocity coincidence with the emission line regions. We address various issues related to intrinsic absorbers including frequency, ionization, and kinematical demographics.

4.2.2 your ID: 0097

First Name: Mary Elizabeth

Last Name: Kaiser

Affiliation: Johns Hopkins University

Title: Intrinsic Absorption in Mrk290 and NGC4593

Authors: Kaiser, et al.

Abstract: Approximately half of all Seyfert galaxies show significant amounts of ionized gas in absorption against the central continuum source. We will present X-ray and UV data for Mrk290 and NGC4593 and discuss the characteristics and the correspondence of the intrinsic absorption in these Seyfert galaxies.

4.2.3 your ID: 0129

First Name: Toru

Last Name: Misawa

Affiliation: Pennsylvania State University

Title: Probing Quasar Outflows with Intrinsic Narrow Absorption Lines

Authors: T. Misawa, M. Eracleous, J. C. Charlton, G. Chartas, R. Ganguly, D. Tytler, D. Kirkman, N. Suzuki, and D. Lubin

Abstract: We present a statistical study of intrinsic NALs, found in 50% of quasars. We iden-

tify two NAL families based on ionization state. From monitoring observations of the mini-BAL in HS1603+3820 we find complex absorber structure and large changes in 4 months. Finally we report exploratory X-ray observations of these quasars.

4.2.4 **your ID: 0090**

First Name: Huiyuan

Last Name: Wang

Affiliation: center for astrophysics, USTC

Title: Polarization of Quasars: Resonant Line Scattering in the Broad Absorption Line Region

Authors: Hui-Yuan Wang, Ting-Gui Wang and Jun-Xian Wang

Abstract: Polarization is a useful probe to investigate the geometries and dynamics of outflows in BAL QSOs. We perform a Monte-Carlo method to simulate the polarization produced by resonant and electron scattering in BALR. We find a rotated and funnel-shaped thin shell outflow is preferred to explain many observed polarization features.

4.2.5 **your ID: 0226**

First Name: Iraida

Last Name: PRONIK

Affiliation: Crimean astrophysical observatory

Title: Investigation of forbidden line variability in the seyfert galaxies nuclei at Crimean observatory

Authors: Pronik I.I.

Abstract: Investigation of forbidden line variability in the seyfirt galaxy nuclei at the Crimean observatory on time scale months and years are carried out since 1970th. Spectra obtained on January 1977 for the NGC 1275, NGC 3227 and NGC 7469 nuclei with the 6-m telescope permit to argue the night-to-night forbidden line variability. It was supposed that this variations can be caused by shochs in flows or jets from the galaxy nuclei.

4.2.6 **your ID: 0196**

First Name: Leah

Last Name: Simon

Affiliation: University of Florida

Title: Physical Properties of Absorbers in High Redshift Quasars

Authors: Leah Simon, Fred Hamann, Max Pettini

Abstract: Emission line studies suggest that quasar environments are typically metal rich, requiring substantial star formation before the observed quasar epochs. We use echelle spectra from VLT-UVES for high-redshift quasars ($z = 1.9$ to 4.6), selected to contain

candidate intrinsic absorbers to test these results and derive basic absorber properties, such as column densities, space densities, and locations relative to the quasars.

5 Session–BLR Chair: B. Peterson

- 09:00-09:35 (I) J. Shields (Baldwin effect, correlations)
- 09:35-10:05 (I) J. Baldwin (BLR photoionization models)
- 10:05-10:25 (C) TBD
- 10:25-10:45 (C) TBD
- 10:45-11:05 Coffee break and posters
- 11:05-11:40 (I) M. Eracleous (line profiles, kinematics)
- 11:40-12:00 (C) TBD
- 12:00-14:00 Lunch

5.1 Contributed Oral Reports:

5.1.1 your ID: 0108

First Name: Junhan

Last Name: You

Affiliation: Department of physics, Shanghai Jiaotong University,

Title: Different redshifts among broad hydrogen lines of a quasar arise from the Cerenkov line-like radiation.

Authors: J.H.You, L.Chen, D.B.Liu

Abstract: The most striking property of a newly recognized line emission mechanism, the Cerenkov line-like radiation, is that the peak of line is not at the precise intrinsic position but slightly red-shifted. we call it Cerenkov line redshift; which is different from line to line, even for lines emitted from same atom species, e.g., from hydrogen. We collect a number of QSOs for which the redshifts of various hydrogen lines have been given out. Subtracting the cosmological component from the observed total redshift, we really find out additional small redshifts for hydrogen lines. The difference between H alpha and beta lines is in good consistency with the prediction of Cerenkov line-like radiation.

5.1.2 your ID: 0022

First Name: Misty

Last Name: Bentz

Affiliation: Ohio State University

Title: Refining the Radius-Luminosity Relationship for AGN

Authors: Misty Bentz, Bradley Peterson, Richard Pogge

Abstract: We more accurately quantify the relationship between the size of the broad-line region (BLR) and the luminosity in AGN. We account for host-galaxy contamination of luminosity measurements using high-resolution HST images, and we replace earlier inadequate BLR radius measurements by carrying out a new ground-based reverberation-mapping campaign.

5.1.3 your ID: 0025

First Name: Ludmila

Last Name: Nazarova

Affiliation: Euro-Asian Astronomical Society

Title: Analysis of the BLR profiles in Fairall 9.

Authors: L.S.Nazarova, P.T.O'Brien and N.G.Bochkarev

Abstract: We present a study of UV and optical spectra of the active galaxy Fairall 9. We have measured the $Ly\alpha/CIV$, $Ly\alpha/H\beta$ and $H\alpha/H\beta$ ratios at the different velocities in the line profiles. The modelling ratios with photoionization code CLOUDY shows that the observed line ratios can be accounted for by two systems of clouds. We discuss the possible geometry of the BLR in Fairall 9.

5.1.4 your ID: 0108

First Name: Junhan

Last Name: You

Affiliation: Department of physics, Shanghai Jiaotong University

Title: Different redshifts among broad hydrogen lines of a quasar arise from the Cerenkov line-like radiation.

Authors: J.H.You, L.Chen, D.B.Liu

Abstract: The most striking property of a newly recognized line emission mechanism, the Cerenkov line-like radiation, is that the peak of line is not at the precise intrinsic position but slightly red-shifted. We call it "Cerenkov line redshift", which is different from line to line, even for lines emitted from same atom species, e.g., from hydrogen. We collect a number of QSOs for which the redshifts of various hydrogen lines have been given out. Subtracting the cosmological component from the observed total redshift, we really find out additional

small redshifts for hydrogen lines. The difference between H alpha and beta lines is in good consistency with the prediction of Cerenkov line-like radiation.

5.1.5 your ID: 0133

First Name: Wolfram

Last Name: Kollatschny

Affiliation: Institute for Astrophysics

Title: Short term line profile variations in selected AGN

Authors: W.Kollatschny

Abstract: I will present results of recent variability campaigns of selected AGN. The spectra have been taken with the 9.2m Hobby-Eberly Telescope. Some AGN show intense line profile variations on time scales of days to weeks only. Other galaxies show smooth line profile variations on time scales of years.

5.1.6 your ID: 0136

First Name: Monique

Last Name: JOLY

Affiliation: Observatoire de Paris-Meudon

Title: BLR: non radiative heating in strong FeII emitters

Authors: M. Joly, M.P. Von-Cetty, P. Von

Abstract: The optical spectrum of Seyfert 1s reveals a great variety in the FeII emission. We investigate the formation of these lines in some strong FeII emitters and determine the physical conditions of the emission region. We show the need of a non radiative heating to account for the observations.

5.1.7 your ID: 0168

First Name: Karen

Last Name: Lewis

Affiliation: Goddard Space Flight Center

Title: Long-Term Profile Variability in Double-Peaked Emission Line AGNs

Authors: K. T. Lewis, M. Eracleous, S. Gezari, J. Halpern, T. Storchi-Bergmann, A. Filippenko

Abstract: A few percent of Active Galactic Nuclei exhibit broad, double-peaked Balmer emission lines, which originate in the outer accretion disk. During the past decade, a campaign has been carried out to study the profile variability of these objects, which can be used to test various models of accretion disk phenomena; I report on the results of this campaign.

5.1.8 your ID: 0169

First Name: Joseph

Last Name: Shields

Affiliation: Ohio University

Title: Implications of the Baldwin Effect and Related Correlations

Authors: Joseph Shields

Abstract: The Baldwin Effect, describing the correlation between emission line equivalent widths and continuum luminosity, continues to be of interest as a clue to broad-line region structure and its underlying physics. In this talk I will review recent results on the Baldwin Effect as seen in AGN ensembles as well as in individual objects (the intrinsic Baldwin Effect), and discuss their implications.

5.1.9 your ID: 0172

First Name: Dragana

Last Name: Ilic

Affiliation: Department of Astronomy, Faculty of Mathematics, University of Belgrade

Title: Physical properties of the Broad Line Region

Authors: D. Ilic, G. La Mura, L. C. Popovic, A. I. Shapovalova, S. Ciroi, V. H. Chavushyan, P. Rafanelli, A. N. Burenkov, A. Mercado

Abstract: We have applied the Boltzmann-Plot method to the Balmer lines intensities to estimate the electron temperature in the BLR. We have studied the Balmer lines of a sample of 90 AGN from SDSS database, as well as the time variability of the same lines of NGC 5548 and NGC 4151.

5.1.10 your ID: 0203

First Name: Casebeer

Last Name: Darrin

Affiliation: University of Oklahoma

Title: A Review of AGN Broad-line Region Photoionization Models

Authors: Darrin A. Casebeer, Karen M. Leighly

Abstract: Photoionization codes such as CLOUDY are invaluable for understanding the physical conditions of the gas emitting AGN broad lines. However, the zeroth-order "one zone" model, in which the lines are assumed to be emitted by gas with a single density and ionization parameter illuminated by an average AGN continuum, cannot qualitatively explain or predict the observed line emission. We review observational and theoretical evidence that the following effects are important: 1.) the BLR emission region is comprised of gas with a range of densities and ionization parameters; 2.) the spectral energy distribution of an individual AGN influences the line ratios and kinematics in an observable way; 3.) the

column density, in particular the presence of gas optically thin to the hydrogen continuum, influences the line emission. Other effects including the gas metallicity and radiative transfer will be discussed as time permits.

5.1.11 your ID: 0216

First Name: Andreas

Last Name: Quirrenbach

Affiliation: Landessternwarte Heidelberg

Title: AGN Research with Future Interferometric Arrays

Authors: A. Quirrenbach

Abstract: Future large optical/infrared interferometers with large telescopes and baselines of several km length can provide sub-milliarcsecond resolution, high sensitivity, and good sky coverage. They can perform imaging spectroscopy of AGN broad line regions, and measure geometric distances to these objects. I will discuss the science case and technical issues for such a next-generation interferometric array.

5.1.12 your ID: 0217

First Name: Yumihiko

Last Name: Tsuzuki

Affiliation: Institute for Cosmic Ray Research, University of Tokyo

Title: FeII emission in low-redshift quasars

Authors: Y.Tsuzuki, K.Kawara, Y.Yoshii, S.Oyabu, T.Tanabe, Y.Matsuoka

Abstract: We measured the strengths of FeII emission together with the fluxes and FWHMs of other emission lines in low-redshift quasars. Correlation analysis for these quantities imply that the black hole mass is a fundamental quantity that controls the SED of the incident continuum which in turn controls the FeII emission.

5.1.13 your ID: 0227

First Name: Elisa

Last Name: Costantini

Affiliation: SRON (National Institute for Space Research) & Utrecht University

Title: The Broad Line Region of AGNs as seen in X-rays

Authors: E. Costantini, J.S. Kaastra, N. Arav, G. Kriss & K. Korista

Abstract: Recently, broad X-ray emission lines have been detected for the first time in the spectra of a number of AGNs. Here we present a quantitative approach that shows that both the UV and several of the X-ray broad lines arise from the Broad Line Region.

5.1.14 your ID: 0234

First Name: Matt

Last Name: Jarvis

Affiliation: Oxford University

Title: Orientation dependence of the virial estimator

Authors: Matt Jarvis, Ross McLure

Abstract: I will discuss recent work which shows that using broad-line widths to estimate black-hole masses via the virial estimator could be subject to orientation effects. This would lead to the virial estimator giving spurious results for black-hole masses in ill-defined quasar samples.

5.1.15 your ID: 0253

First Name: Iskra

Last Name: Strateva

Affiliation: Max Planck Institute for Extraterrestrial Physics

Title: Accretion-Disk Balmer-Line Emission in AGN

Authors: Strateva, I., Eracleous M., Brandt. W. N.

Abstract: I will summarize the properties of a special class of AGN whose low-ionization broad-line region is dominated by the accretion disk. I will emphasize recent X-ray studies and comment on the accretion modes, and speculate on the reasons behind the dominant contribution of the accretion disk to the Balmer-line emission.

5.2 Contributed Posters:**5.2.1 your ID: 0023**

First Name: William

Last Name: Welsh

Affiliation: Dept. of Astronomy, San Diego State University

Title: Reverberation Mapping of Flows in NGC 5548 and NGC 7469

Authors: W.F. Welsh

Abstract: We present an analysis of archival NGC 5548 Hbeta line profile data. Using a random-walk interpolation method to patch gaps in the time series, we computed standard CCFs and find: (1) differential measurements show the blue wing lags the red wing, indicative of inflow; (2) the blue/red wing ratio correlates with luminosity; and (3) the blue/red wing variations provide evidence of structural changes in the BLR on the dynamical timescale. We also examine the CIV profile in IUE observations of NGC 7469 and find similar results.

5.2.2 your ID: 0025

First Name: Ludmila

Last Name: Nazarova

Affiliation: Euro-Asian Astronomical Society

Title: EVALUATION OF THE DISK AND JET PRESENCE IN DOUBLE-PEAKED GALAXY 3C 390.3

Authors: L.S.NAZAROVA, N.G.BOCHKAREV and C.M.Gaskell

Abstract : We present a study of UV and optic spectra of the active galaxy 3C 390.3 taken as a part of the International AGN Watch programme. We have measured of line ratios at different velocities in the line profiles: $L\alpha/CIV$, $L\alpha/H\beta$ and $H\alpha/H\beta$. The velocity dependence of the line ratios $L\alpha/H\beta$ is different from what has been reported for most others AGNs. Teoretical modelling of the line ratios suggests that the density is higher in the higher velocity gas producing the displaced broad line peaks, and the observed line ratios can be accounted for by two system of clouds. We discuss the possible geometry of the BLR in 3C390.3

5.2.3 your ID: 0207

First Name: Fausto

Last Name: Vagnetti

Affiliation: Universita' di Roma Tor Vergata **Title: Continuum and Emission-line Variability of High Luminosity Quasars**

Authors: Vagnetti, F., Trevese, D., Paris, D., Stirpe, G., Zitelli, V.

Abstract: We report about our ongoing echo-mapping campaign of PG 1247+268 and PG 1634+706 aimed at the determination of the masses of the central black holes. We detect continuum and line variability in both objects despite their high luminosities ($L > \sim 2 \times 10^{46}$ erg/s).

6 Session–Torus Chair: N. Levenson

- 14:00-14:35 (I) (Unification issues)
- 14:35-15:10 (I) E. Moran (spectropolarimetry)
- 15:10-15:30 (C) TBD
- 15:30-15:50 (C) TBD
- 15:50-16:10 (C) TBD
- 16:10-16:30 Coffee break and posters

- 16:30-17:05 (I) R. Maiolino (X-ray absorption columns)
- 17:05-17:25 (C) TBD
- 17:25-17:45 (C) TBD
- 17:45-18:05 (C) TBD

6.1 Contributed Oral Reports:

6.1.1 your ID: 0036

First Name: Almudena

Last Name: Prieto

Affiliation: MPIA / IAC

Title: The central parsec region of active galactic nuclei with Adaptive Optics

Authors: Almudena Prieto

Abstract: Adaptive optics and interferometer techniques in the IR are proving to be extremely powerful in penetrating and resolving the central parsecs region of the nearest active galaxies. I will review the main results arisen from a extensive program with the VLT focused on the determination of the parsec scale nuclear structure and associated spectral energy distribution for the brightest and nearest active galactic nuclei in the Southern hemisphere.

6.1.2 your ID: 0049

First Name: Rajesh

Last Name: Deo

Affiliation: Georgia State University

Title: Spitzer IRS Spectra of Seyfert 1.8 and 1.9 Galaxies: A view through the torus atmosphere?

Authors: Rajesh Deo, Mike Crenshaw, Steve Kraemer

Abstract: We present Spitzer IRS spectra of 12 Seyfert 1.8 and 1.9 galaxies over 5-38 μm . We compare the spectral characteristics of this sample to those of Seyfert 1 and Seyfert 2 galaxies from the Spitzer archives. Analysis of the Mid-IR continuum and the silicate 10 μm feature allows us to probe the geometry and the dust properties of the torus at the intermediate viewing angles of Seyfert 1.8s and 1.9s.

6.1.3 your ID: 0052

First Name: Rachel

Last Name: Mason

Affiliation: Gemini Observatory

Title: An IR study of the starburst in the torus of NGC 1097

Authors: R. Mason, N. Levenson, C. Packham et al.

Abstract: The possibility that the AGN obscuring torus and nuclear star formation are intimately connected has been raised by many authors on observational and theoretical grounds. The detection of a young stellar cluster within only 9 pc of the nucleus of the LINER/Sy1 NGC1097 appears to support this hypothesis, but the existence of tori in low-luminosity AGN is currently the subject of debate. We present high spatial resolution IR observations and modelling of the nucleus of NGC 1097 that demonstrate that this galaxy does in fact harbour a dusty torus, and examine the source(s) contributing to the dust heating.

6.1.4 your ID: 0053

First Name: Guido

Last Name: Risaliti

Affiliation: Harvard - Smithsonian Center for Astrophysics

Title: Time resolved X-ray eclipse of NGC 1365: measuring the source size

Authors: G. Risaliti

Abstract: We present an extraordinary X-ray spectral variation of the AGN in NGC 1365, which was observed by Chandra to change from Compton-thin to Compton-thick and back to Compton-thin in four days. This fast variation implies a size of $\sim 10^{14}$ cm for the emitting region, and an extremely compact ($\sim 10^{16}$ cm) size of the clumpy circumnuclear absorber.

6.1.5 your ID: 0065

First Name: Alessandra

Last Name: Lamastra

Affiliation: Universit degli studi Roma Tre

Title: A model for the X-ray absorption in Compton-thin AGN

Authors: A. Lamastra, G. C. Perola, G. Matt

Abstract: The fraction of Compton-thin AGN appears observationally to be anticorrelated to their X-ray luminosity. The molecular torus seems not to conform to this new constraint. We present a model in which the Compton-thin absorption is due to the molecular gas in the host galaxy disk. The gravitational effects of the black hole on the disk shape then leads naturally to the observed anticorrelation.

6.1.6 your ID: 0067

First Name: Moshe

Last Name: Elitzur

Affiliation: University of Kentucky

Title: The AGN Torus — End of the "Doughnut" Paradigm?

Authors: Moshe Elitzur

Abstract: Compact sizes indicate that the torus is the region of the clumpy wind coming off the accretion disk in which the clouds are dusty and optically thick. Torus clouds were likely detected in recent water maser observations of NGC 3079. The torus disappears at bolometric luminosities lower than $\sim 10^{42}$ erg/s. At lower luminosities, the broad line region, too, disappears and the AGN main dynamic channel for release of accreted mass seems to be switching from torus outflow to radio jets.

6.1.7 your ID: 0068

First Name: Junxian

Last Name: Wang

Affiliation: Center for Astrophysics, University of Science & Technology of China

Title: On the fraction of X-ray obscured quasars

Authors: Junxian Wang

Abstract: Various studies have claimed that the fraction of obscured AGN drops with luminosity. We present our recent study on the fraction of X-ray obscured quasars in Chandra Deep Fields and in the local universe with evidences against this scheme.

6.1.8 your ID: 0070

First Name: Peng

Last Name: Jiang

Affiliation: Center for Astrophysics

Title: On the X-ray Baldwin effect

Authors: P.Jiang,J.X.Wang & T.G.Wang

Abstract: Most Active Galactic Nuclei (AGN) exhibit a narrow Fe K line at 6.4 keV in the X-ray spectra, due to the fluorescent emission from cold material far from the inner accretion disk. Using XMM-Newton observations, Page et al. found that the equivalent width (EW) of the narrow Fe K line decreases with increasing luminosity, suggesting a decrease in the covering factor of the material emitting the line (presumably the torus). By combining the archival Chandra HETG observations of 34 type 1 AGNs with XMM observations in literature, we build a much large sample with 101 AGNs. We find a similar X-ray Baldwin effect in the sample, however, we note that the anti-correlation is dominated by the radio loud AGN in the sample, whose X-ray spectra might be contaminated by the relativistic jet. Excluding the radio loud AGN, we find a much weaker anti-correlation. We present Monte-Carlo simulations showing anti-correlation can be attributed to the relative short time scale variations of the X-ray continuum, that such a weak anti-correlation can be attributed to the relative short time scale variations of the X-ray continuum.

6.1.9 your ID: 0078

First Name: Xinwen

Last Name: Shu

Affiliation: Center for Astrophysics, USTC

Title: Constrains on the geometry of torus and scattering in Sy2s

Authors: Shu Xinwen, Wang Junxian et al.

Abstract: Based on a large sample Seyfert 2 galaxies with both optical spectropolarimetric and X-ray data, we show that in addition to the nuclei activity, the obscuration also plays an important role in the visibility of polarized broad emission lines in Sy2s. We can reach the results in the unified model if: a) the absorption column density is higher at large inclinations and b) the scattering region is obscured at large inclinations.

6.1.10 your ID: 0082

First Name: Suganuma

Last Name: Masahiro

Affiliation: National Astronomical Observatory of Japan

Title: Reverberation Measurements of the Inner Radius of the Dust Torus in Nearby Seyfert 1 Galaxies

Authors: Suganuma, M., Yoshii, Y., Kobayashi, Y., Minezaki, T., Enya, K., Tomita, H., Aoki, T., Koshida, S., and Peterson, B. A.

Abstract: We detected clear time-delayed responses of the K-band flux variations to the V-band flux variations for several nearby Seyfert 1 galaxies from monitoring observations by the MAGNUM telescope. The lag time can be interpreted as light-travel time between the central engine and the inner edge of the dust torus, which was found to be scaled by the square root of the central luminosity and located on the upper boundary of those of the BLR.

6.1.11 your ID: 0084

First Name: Martin

Last Name: Gaskell

Affiliation: University of Nebraska

Title: The Origin of Wavelength-Dependent Continuum Delays in AGNs - a New Model

Authors: M. Gaskell

Abstract: I propose a new model of wavelength-dependent continuum delays in AGNs which quantitatively reproduces the delays, the detailed wavelength dependences, and colour hysteresis, and which avoids all of the problems with the lamp post model. The model also explains how the delays vary with epoch of observation.

6.1.12 your ID: 0105

First Name: Emmanuel

Last Name: Galliano

Affiliation: ESO

Title: Embedded Clusters around AGN /or/ modeling the VLTI observations of the torus in NGC1068

Authors: E. Galliano, D. Alloin

Abstract:

6.1.13 your ID: 0127

First Name: Lei

Last Name: Hao

Affiliation: Cornell University

Title: The Mid-IR spectra of the SDSS AGNs

Authors: Lei Hao et al.

Abstract: We present the spectra of about 70 AGNs uniformly selected from a complete sample of the SDSS AGN. Among the ~ 4000 AGNs spectroscopically selected from the SDSS, we choose ~ 70 Type I and Type II AGNs uniformly sampled by their [OIII] luminosities and observe their mid-IR spectra using the Spitzer Infrared Spectrograph. The mid-IR spectra show a great variety. There is no direct correlation between the IR spectral features and the [OIII] luminosities. Type I and Type II AGNs are not clearly distinguished from their IR spectra features. We discuss how this sample can help us to understand the AGN unification scheme and how to understand the effect of extinction to the AGN luminosity function.

6.1.14 your ID: 0154

First Name: Juan Antonio

Last Name: Fernandez Ontiveros

Affiliation: IAC

Title: HST and Adaptive Optics observations with VLT-NACO of NGC 7582, an AGN with nuclear starbursts

Authors: J. A. Fernandez Ontiveros, A. Prieto, J. Acosta-Pulido

Abstract: NGC 7582 is an AGN with a strong nuclear star formation and it is highly obscured by dust. HST and NIR Adaptive Optics observations with NACO reveal the hidden nucleus and the surrounding star formation regions with extremely high resolution.

6.1.15 your ID: 0167

First Name: Patrick

Last Name: Ogle

Affiliation: Spitzer Science Center

Title: Mid-IR Spectra of Quasars and Radio Galaxies

Authors: Ogle, P., Antonucci, R. R. J, Whysong, D.

Abstract: Spitzer mid-IR spectra reveal a wealth of new information about the dusty torus and narrow-line region in 3C radio galaxies and PG quasars. We find a connection between silicate emission and the strengths and widths of optical emission lines, which may come from ionized gas ablated from the torus.

6.1.16 your ID: 0170

First Name: Walter

Last Name: Jaffe

Affiliation: Leiden Observatory

Title: Infrared Interferometric Imaging of Torii

Authors: Jaffe, Meisenheimer, Raban, Tristram, Rottgering

Abstract: We report the results of measurements with the Mid-Infrared Interferometer (MIDI) on six nearby AGNs. The resolution of the interferometer, about 10 millarcsec or a few parsecs, and the wavelength range, 10 microns, allows us to obtain structural information on the dust regions surrounding and obscuring the nucleus. For three of the AGNs, NGC 1068, Circinus, and Cen A, we are approaching the points where we can "map" the nuclear "torus" regions.

6.1.17 your ID: 0178

First Name: Bernhard

Last Name: Schulz

Affiliation: California Inst. of Technology, IPAC

Title: Unification of 3CR Radio Galaxies and Quasars

Authors: Bernhard Schulz, Ralf Siebenmorgen, Martin Haas, Endrik Kruegel, Rolf Chini

Abstract: With the Spitzer IRS (Houck et al. 2004) we have observed seven powerful FR2 radiogalaxies and seven quasars. Both samples are comparable in both, isotropic 178 Hz luminosity and redshift range. We find for both samples similar distributions in the luminosity ratios of Mid-IR high- and low-excitation lines ($[NeV]/[NeII]$), and of Mid-IR high-excitation line to radio power ratio ($[NeV]/P_{178MHz}$). We further observed Silicate features at 10 and 18 micron in emission. Emission features are limited to the quasar group, while silicate absorption is seen only in the radio galaxies. These observations are all in

agreement with unification schemes that explain both groups as the same class of objects seen under different orientation angles.

6.1.18 your ID: 0199

First Name: Roberto

Last Name: Maiolino

Affiliation: INAF - Observatory of Rome

Title: X-ray absorption in AGNs

Authors: R. Maiolino

Abstract: We will review our current understanding of gas absorption in AGNs, as traced by X-ray observations, as well as the implications for the physics of the circumnuclear medium. We will review the distribution of gaseous column densities among AGNs of different types as well as evidences for absorption variability. We will discuss the comparison between X-ray and optical/IR absorption. Finally, we will review our current constraints on the X-ray absorption properties in high redshift sources.

6.1.19 your ID: 0205

First Name: Shiyin

Last Name: Shen

Affiliation: Shanghai Astronomical Observatory

Title: The soft X-ray properties of QSOs

Authors: Shen, S.; White, S.D.M.; Mo, H.J.

Abstract: We use the ROSAT All Sky Survey to study the soft X-ray properties of a homogeneous sample of 46,420 quasars selected from the third data release of the Sloan Digital Sky Survey.

6.1.20 your ID: 0224

First Name: Kotaro

Last Name: Kohno

Affiliation: Institute of Astronomy, University of Tokyo

Title: Compact nuclear starburst in the central regions of Seyfert galaxies

Authors: Kohno, K.

Abstract: We present an imaging survey of the CO(1–0), HCN(1–0), and HCO⁺(1–0) lines in the nearby 19 Seyfert and 12 starburst galaxies using the Nobeyama Millimeter Array. A new diagnostic of the nuclear power source in dusty active galaxies has been proposed based on millimeter-wave HCN/HCO⁺ spectroscopy.

6.1.21 your ID: 0225

First Name: Yasuyuki

Last Name: Watabe

Affiliation: Center for Computational Sciences, University of Tsukuba

Title: Obscuration of AGNs by Circumnuclear Starbursts

Authors: Yasuyuki Watabe, Masayuki Umemura

Abstract: We examine the possibility of the relation between the obscuring materials and starburst-origin dusty gas clouds. We pursue the dynamics of clouds, including the effects of radiation forces by an AGN and a starburst. We conclude that a significant part of AGN obscuration can be attributed to starburst-origin clouds.

6.1.22 your ID: 0113

First Name: Matteo

Last Name: Guainazzi

Affiliation: European Space Astronomy Center of ESA

Title: Whereabouts of cold and hot gas in obscured AGN

Authors: Matteo Guainazzi, Stefano Bianchi

Abstract: In this talk we review the constraints on the location, on the physical and geometrical properties of gas in the AGN circumnuclear environment as derived from recent results on: a) X-ray variability for obscured and reprocessed spectral features; b) spatial coincidence between diffuse soft X-ray emission and NLR - as traced by HST O[III] maps - on scales as large as hundreds parsecs; c) correspondence between optical reddening and X-ray obscuration in Compton-thin obscured AGN.

6.1.23 your ID: 0246

First Name: Sebastian

Last Name: Hoenig

Affiliation: Max-Planck-Institut fuer Radioastronomie

Title: 3-dimensional Radiative Transfer Simulation of Clumpy Dust Tori

Authors: S. F. Hoenig, T. Beckert, K. Ohnaka, G. Weigelt

Abstract: We present our 3-dimensional radiative transfer simulations of clumpy dust tori. The models have been applied to recent NIR and MIR interferometric studies of the Seyfert 2 AGN NGC 1068 and the Circinus galaxy. The model results are in good agreement with the observed infrared SEDs and visibilities.

6.1.24 your ID: 0248

First Name: Anne

Last Name: Poncelet

Affiliation: Paris Observatory

Title: VISIR observations of the nucleus of NGC 1068

Authors: A. Poncelet, G. Perrin, H. Sol

Abstract: We present first burst-mode images and high-resolution spectra of the nucleus of NGC 1068 obtained with the VISIR (the VLT Imager and Spectrometer in the mid-IR). Spectra have been obtained with the [ArIII], [SiIV] and [NeII] filters, on the nucleus and on knots aligned with P.A. = 13° traced by deconvolution of VISIR images (Galliano et al. 2005). We study the spatial evolution of the continuum and emission lines from the core up to tenth of parsecs. Combined with a speckle analysis of VISIR burst-mode images in the [NeII] filter, we attempt to establish the link between the parsec-scale distribution of dust, associated with the dusty torus and already observed with the Mid-Infrared Interferometer (MIDI) at the VLT (Jaffe, et al. 2004; Poncelet et al. 2006), and more extended diffuse dust probably related to the ionisation cone (Rhee & Larkin 2005, Mason et al. 2005).

6.1.25 your ID: 0257

First Name: Alejo

Last Name: Martinez-Sansigre

Affiliation: Oxford University/MPIA

Title: High-redshift Obscured Quasars

Authors: Martinez-Sansigre, A., et al.

Abstract: I will describe how using well defined mid-IR and radio selection criteria, we found a population of high-redshift ($z \sim 2$) type-2 quasars. Modelling our population, we inferred type-2 to type-1 ratio $\sim 2 - 3 : 1$, so most SMBH growth is obscured by dust. I will also discuss the multi-wavelength properties of the sample.

6.2 Contributed Posters:**6.2.1 your ID: 0220**

First Name: LIZA

Last Name: VIDELA

Affiliation: University of Chile

Title: Dusty Torus in AGN

Authors: Videla, Lira

Abstract: We perform imaging on 48 Sy2 galaxies in 6 IR bands. We are separating the contribution of the torus from the host galaxy by radial profile fitting techniques and we

will compare the observed SEDs with theoretical models of torus emission to constraint geometrical and physical parameters

6.2.2 your ID: 0174

First Name: Rene

Last Name: Goosmann

Affiliation: Center of Theoretical Astrophysics, Astronomical Institute of the Academy of Sciences

Title: STOKES - a Publicly Available Radiative Transfer Code for Polarization Modeling in the Optical/UV

Authors: R. W. Goosmann, C.-M. Gaskell, M. Shoji

Abstract: We introduce a new, publicly available Monte Carlo radiative transfer code, STOKES, to model polarization induced by scattering off free electrons and dust grains. It can be used in a wide range of astrophysical applications. We use STOKES to model the polarization produced by scattering regions in active galactic nuclei. The code and documentation are freely available at <http://www.stokes-program.info/>.

7 Session–NLR Chair: E. Moran

- 09:00-09:35 (I) M. Whittle (general overview)
- 09:35-10:05 (I) B. Groves (models)
- 10:05-10:25 (C) TBD
- 10:25-10:45 (C) TBD
- 10:45-11:00 Coffee break and posters
- 11:00-11:20 (C) TBD
- 11:20-11:40 (C) TBD
- 11:40-12:00 (C) TBD

7.1 Contributed Oral Reports:

7.1.1 your ID: 0019

First Name: Michel

Last Name: DENNEFELD

Affiliation: Institut of Astrophysics (IAP) PARIS

Title: To be defined

Authors:

Abstract:

7.1.2 your ID: 0040

First Name: Brent

Last Name: Groves

Affiliation: Max Planck Institute for Astrophysics

Title:

Authors:

Abstract: To be discussed

7.1.3 your ID: 0079

First Name: David

Last Name: Rupke

Affiliation: University of Maryland

Title: Spitzer Observations of Mid-Infrared Emission Lines in LINERS

Authors: D. Rupke, E. Sturm, H. Netzer, D.-C. Kim, S. Veilleux, D. Lutz, & A. Contursi

Abstract: We present Spitzer mid-infrared spectra of a diverse sample of LINERs. We distinguish between optically-selected and infrared-selected LINERs using fine structure emission lines that arise in the narrow-line region, star-forming regions, and possibly shock-excited regions. Empirical diagrams and photoionization models shed light on the surprising line ratios we observe.

7.1.4 your ID: 0102

First Name: Mark

Last Name: Whittle

Affiliation: University of Virginia

Title: The Narrow Line Region: An Overview

Authors: Mark Whittle

Abstract: This review talk will summarize a number of key properties of the Narrow Line Region, emphasizing recent developments in the field.

7.1.5 your ID: 0122

First Name: Nicola

Last Name: Bennert

Affiliation: Institute of Geophysics and Planetary Physics

Title: Properties of the narrow-line region in active galaxies from spatially-resolved spectroscopy

Authors: Nicola Bennert

Abstract: We study the NLRs in type-1 and type-2 Seyfert-galaxies and quasars using optical longslit and integral-field spectroscopy. We derive properties such as size (from the transition of line-ratios in diagnostic diagrams), electron density, ionization parameter, and velocity fields. We discuss consequences for the NLR size-luminosity relation and the unified model.

7.1.6 your ID: 0164

First Name: Dawei

Last Name: Xu

Affiliation: National Astronomical Observatories, Chinese Academy of Sciences

Title: Probing the NLR in NLS1s from SDSS spectroscopy

Authors: D. Xu, S. Komossa, H. Zhou, J. Wei and T. Wang

Abstract: We study the NLR properties of NLS1s. Various correlations between the optical properties of NLS1s and BLS1s are detected. We investigate the relation between M_{BH} , L/L_{Edd} and physical parameters of the NLR, in order to search for the driver of the observed trends.

7.1.7 your ID: 0177

First Name: Clive

Last Name: Tadhunter

Affiliation: University of Sheffield

Title: Spatially resolved outflows in the NLR of powerful radio galaxies

Authors: Tadhunter

Abstract: I will present new data on spatially resolved NLR outflows in powerful radio galaxies, based on HST and VLT observations. The data will be used to address the issue of whether the AGN and jets have a significant effect on the evolution of the bulges of the host galaxies. (could be presented in either the outflows or the NLR sessions)

7.2 Contributed Posters:

7.2.1 your ID: 0120

First Name: Charles

Last Name: Nelson

Affiliation: Drake University

Title: [OIII] Profiles of PG Quasars

Authors: C. Nelson, R. Gelderman, T. Moroe, A. Plasek, A. Thompson

Abstract: We present high S/N, high resolution profiles of the [OIII] 5007 emission line for PG quasars with $z < 0.5$. Since the [OIII] kinematics in AGN are predominantly due to motion in the host bulge potential, we can use the widths of the [OIII] line profiles to estimate M_{bh} for the sample.

8 Session—Dust Grains Chair: J. Baldwin

- 14:00-14:35 (I) A. Laor (theory)
- 14:35-15:10 (I) E. Sturm (Spitzer observations)
- 15:10-15:30 (C) TBD
- 15:30-15:50 (C) TBD
- 15:50-16:10 (C) TBD
- 16:10-16:30 Coffee break and posters
- 16:30-17:05 (I) B. Czerny (extinction curve)
- 17:05-17:25 (C) TBD
- 17:25-17:45 (C) TBD
- 17:45-18:05 (C) TBD
- 18:30-21:30 Conference Banquet

8.1 Contributed Oral Reports:

8.1.1 your ID: 0003

First Name: Luc

Last Name: Binette

Affiliation: Instituto de Astronomer, UNAM

Title: Dust and the far-UV break in Quasar Energy Distributions

Authors: Luc Binette, Yair Krongold, Sinhue Haro-Corzo

Abstract: The composite spectrum of quasars derived from archived HST-FOS spectra by Zheng et al. (1997) and Telfer et al. (2002) reveals a sharp steepening of the energy distribution (SED) near 100nm. In a recent work (ApJ 631, p661) we have shown that crystalline carbon-based dust could explain the shape of the observed steepening. We now use HST-FOS data of Ton 34, the steepest known quasar SED, to infer further properties of the absorption region.

8.1.2 your ID: 0041

First Name: Mario

Last Name: Schweitzer

Affiliation: Max Planck Institut for extraterrestrial physics

Title: Silicate Emission In AGN - Evidence For The Torus ?

Authors: Mario Schweitzer

Abstract: Long sought silicate emission features in AGN have been recently detected by Spitzer spectroscopy, but it remains uncertain how they can be interpreted in unified scenarios. We will present our recent results from Spitzer and SUBARU observations concerning silicate emission in AGN and discuss their interpretation.

8.1.3 your ID: 0045

First Name: Eckhard

Last Name: Sturm

Affiliation: Max-Planck-Institut fuer extraterrestrische Physik (MPE)

Title: Infrared Dust Properties - A Prime Tool For AGN Diagnostics

Authors: Eckhard Sturm

Abstract: Mid-infrared spectroscopy of dust features has become a prime diagnostic tool for many issues in AGN research (e.g. torus and NLR properties, starburst-AGN connection, dominant power source, QSO host galaxies, evolution of AGN, etc.). I will summarize recent major developments and results in this field. (Review Talk)

8.1.4 your ID: 0050 (withdrawn)

First Name: Sperello

Last Name: di Serego Alighieri

Affiliation: INAF - Osservatorio Astrofisico di Arcetri

Title: Dust scattering in radio galaxies at $z > 3$ and a test of the EEP

Authors: S. di Serego Alighieri & C. de Breuck

Abstract: We present measurements of linear polarization for 4 powerful radio galaxies at $z > 3$, and discuss them, together with all available polarization data for $z > 2$, in terms of dust scattering of anisotropic radiation from a central QSO and of increasing dilution by young stars at the highest redshifts. We also present an update of the most stringent test of the Einstein equivalence principle, based on these measurements.

8.1.5 your ID: 0123

First Name: Aigen

Last Name: Li

Affiliation: Purple Mountain Observatory/Univ. Missouri

Title: Excitation and Destruction of PAHs in AGN and Low-Metallicity Galaxies

Authors: Aigen Li

Abstract:

8.1.6 your ID: 0149

First Name: Ralf

Last Name: Siebenmorgen

Affiliation: ESO

Title: SED models of AGNs

Authors: Siebenmoregn and Kruegel

Abstract: AGN models aiming to account for the observed infrared SEDs consider a physical description of the dust and a solution of the radiative transfer problem. Mid infrared spectra obtained at different spatial scales (SST-IRS, ISO and Timmi2,VLT) are presented. They show that PAH bands are detected on large scales but reduced near the centre of AGN. This is explained by examining the heating mechanism of PAHs after hard (FUV, X-ray) photon interactions. A most economic radiative transfer AGN model is presented where three parameters, luminosity, effective size and extinction of the nucleus are varied to compute the SED. Such a model is sufficient to account for broad band data of a sample of 68 galaxies of the 3CR catalogue. Realistic AGN models which are consistent with the unification scheme need to explain the overall presence or absence of the 9.7mic. silicate emission feature. This can be done by considering various geometries or a dust density distribution of a turbulent medium. We present a new 3D Monte Carlo radiative transfer model of the AGN torus and pay particular attention to a clumpy structure of the nuclear region.

8.1.7 your ID: 0114

First Name: Ari

Last Name: Laor

Affiliation: Technion

Title: Grain Physics near AGN

Authors: Ari Laor

Abstract: I will discuss various processes which can modify the grain size distribution, composition, and abundance near AGN, and how to observationally constrain these properties.

8.1.8 your ID: 0258

First Name: Kieran

Last Name: Cleary

Affiliation: Jet Propulsion Laboratory

Title: Spitzer Observations of Powerful Radio Sources

Authors: Cleary, K., Lawrence, C.R., Marshall, J.A., Hao, L., Meier, D.

Abstract: We have measured mid-infrared radiation from an orientation-unbiased sample of 3CRR galaxies and quasars with $0.4 < z < 1.2$ with the IRS and MIPS instruments on the Spitzer Space Telescope. We fit the Spitzer data as well as other measurements from the literature with synchrotron and dust components. At 15 microns, quasars are typically four times brighter than radio galaxies with the same isotropic radio power. Based on our fits, half of this difference is due to the presence of non-thermal emission in the quasars but not the radio galaxies. The other half is due to dust absorption in the radio galaxies but not the quasars.

8.2 Contributed Posters:

9 Session–Stellar Processes Chair: D. Crenshaw

- 09:00-09:35 (I) S. Nayakshin (overview theory)
- 09:35-10:05 (I) N. Levenson (observations)
- 10:05-10:25 (C) TBD
- 10:25-10:45 (C) TBD
- 10:45-11:05 Coffee break and posters
- 11:05-11:40 (I) F. Hamann (abundance determinations)
- 11:40-12:00 (C) TBD

9.1 Contributed Oral Reports:

9.1.1 your ID: 0014

First Name: Imanishi

Last Name: Masatoshi

Affiliation: National Astronomical Observatory of Japan

Title: Infrared 3-4 micron spectroscopic investigations of nuclear starbursts in Seyfert 1 and 2 galaxies

Authors: Masatoshi Imanishi

Abstract: We performed infrared 3-4 micron spectroscopy of > 50 Seyfert galaxies. The

nuclear starburst luminosities in dusty tori are quantitatively estimated from the 3.3 micron PAH emission luminosities, a good starburst indicator. We find that nuclear starburst luminosity positively correlates with AGN power, suggesting their physical connections.

9.1.2 your ID: 0064

First Name: Tohru

Last Name: Nagao

Affiliation: National Astronomical Observatory of Japan

Title: Metallicity Evolution of Active Galactic Nuclei

Authors: Tohru Nagao, Roberto Maiolino, Alessandro Marconi

Abstract: We present our recent analysis on the metallicity evolution of AGNs traced by both BLRs and NLRs. The BLR metallicity is investigated through the composite spectra of SDSS quasars, and the NLR metallicity is investigated for high- z radio galaxies.

9.1.3 your ID: 0132

First Name: Minjin

Last Name: Kim

Affiliation: Carnegie Observatories (Seoul National University)

Title: Constraints on the Star Formation Rate in Active Galaxies

Authors: Minjin Kim, Luis C. Ho, Myungshin Im

Abstract: In order to investigate the ongoing star formation rate of the host galaxies of AGNs, we measured the strength of [O II] and other optical emission lines from 3600 AGNs selected from the Sloan Digital Sky Survey. We find that the host galaxies of Type 1 AGNs experience very modest star formation concurrent with the optically active phase of the nucleus.

9.1.4 your ID: 0148

First Name: Joel

Last Name: Vernet

Affiliation: European southern Observatory

Title: The Massive Host of Radio Galaxies Across Cosmic Time

Authors: J. Vernet, N. Seymour, C. De Breuck, D. Stern, R. Fosbury

Abstract: We present results of a comprehensive Spitzer survey of 70 radio galaxies across $1 < z < 5.2$. Using IRAC (3.6-8 μ), IRS (16 μ) and MIPS (24-160 μ) imaging, we decompose the restframe optical thru infrared SED into stellar, AGN and dust component. The resultant stellar luminosities imply host stellar masses of 10^{11-12} Msun, similar to most massive local giant elliptical galaxies. The mean stellar mass remains constant up to $z \sim 4$, indicating that the upper end of the mass function is already in place already cosmic epochs.

9.1.5 your ID: 0165

First Name: Jing

Last Name: Wang

Affiliation: National Astronomical Observatories, CAS

Title: How AGN and star formation connect: Eigenvector I as an ÄGE indicator of AGN

Authors: J. Wang; J. Y. Wei & X. T. He

Abstract: The Eigenvector I(EI) space is first extended into IR-color $\alpha(60, 25)$ and $[\text{OIII}]/\text{H}\beta_n$ by performing a PCA on an IR-color selected Seyfert 1.5s sample. Our EI is turned to be dominated by $\alpha(60, 25)$ and strongly affected by RF, $[\text{OIII}]/\text{H}\beta_n$ and $\text{EW}(\text{H}\beta_b)$, which indicates the EI space is most likely related to the nuclear SF history. In addition to confirm the work of Xu et al. (2003), we find the Seyferts with both large RFe and $[\text{OIII}]/\text{H}\beta_n$ are rare. As an case study, a spectacular post-starburst NLS1 SDSSJ085338.27+033246.1 is detailed examined. A simple 0.1Gyr SSP suggests the $\langle \text{SFR} \rangle \sim 70M_\odot/\text{yr}$ which is extremely larger than the current $\text{SFR} \sim 3M_\odot/\text{yr}$. A possible evolutionary scenario is proposed.

9.1.6 your ID: 0221

First Name: Andreea

Last Name: Petric

Affiliation: Columbia University

Title: A Search for Star Formation in High Redshift Quasars

Authors: A. Petric, C. Carilli, F. Bertoldi, R. Mason, A. Beelen, D. Helfand, P. Cox, A. Omomnt

Abstract: We present radio/mm/submm/IR observations for a sample of 16 $z \sim 2$ QSOs. Four of the mm detected sources have both flux densities consistent with the radio-to-FIR correlation and spectral indices indicative of massive star-formation. However we do not detect PAH line emission as observed in nearby AGN+starburst systems like Mrk 273.

9.1.7 your ID: 0037

First Name: Qingwen

Last Name: Wu

Affiliation: Shanghai Astronomical Observatory(SHAO)

Title: The possible relation between SFR and accretion rate in different type of AGNs

Authors: Qingwen Wu & Xinwu Cao

Abstract: We calculated the accretion rates of low-luminosity LINERs from their hard X-ray luminosities based on spectral calculations for RIAFs. We find that LINERs follow the same

correlation between star formation rate and accretion rate defined by normal bright AGNs, when reasonable parameters are adopted for RIAFs.

9.1.8 **your ID: 0236**

First Name: Richard

Last Name: Davies

Affiliation: Max Planck Institut fuer extraterrestrische Physik

Title: Eddington limited starbursts in the central 10pc of AGN

Authors: R. Davies, R. Genzel, L. Tacconi, F. Mueller Sanchez, S. Friedrich, A. Sternberg

Abstract: We present results from a survey of nearby AGN using the near infrared adaptive optics integral field spectrograph SINFONI. These data enable us to probe the distribution and kinematics of the gas and stars at spatial resolutions as small as 0.085arcsec. We find strong evidence for recent but short lived starbursts residing in very dense nuclear disks; on scales of less than 10pc these reach Eddington-limited luminosities, perhaps accounting for their short duration. And we show that there may be a relation between the age of the starburst and the accretion rate onto the AGN. In addition, for NGC1068 at a resolution of 6pc, we present direct observations of molecular gas close around the AGN which we identify with the nuclear obscuring material.

9.1.9 **your ID: 0237**

First Name: Marc

Last Name: Sarzi

Affiliation: University of Hertfordshire

Title: The Stellar Populations in the Central 10pc of Seyfert-2 Nuclei

Authors: Marc Sarzi, Joe Shields, Rick Pogge, Paul Martini

Abstract: Building on previous work on low-luminosity active galactic nuclei, I will present a study of the stellar populations in the very central 10 parsecs of a sample of 19 Seyfert-2 galaxies. The analysis is based on HST-STIS spectra and on a carefull separation of gas emission and the stellar continuum, featuring state-of-the-art stellar population models and also the inclusion of a featureless AGN continuum and of dust extinction. I will discuss our findings on the age, metallicity and abundance of alpha elements of the nuclear populations of these galaxies in the context of the AGN-starburst connection, the formation of galactic nuclei, and the fuelling of supermassive black holes.

9.1.10 **your ID: 0242**

First Name: Nancy A.

Last Name: Levenson

Affiliation: University of Kentucky

Title: Observations of Stellar Processes in Active Galaxies

Authors: N. A. Levenson

Abstract:

9.1.11 your ID: 0017

First Name: Masatoshi

Last Name: Imanishi

Affiliation: National Astronomical Observatory of Japan

Title: Infrared 3-4 micron spectroscopic investigations of nuclear starbursts in Seyfert 1 and 2 galaxies

Authors: Masatoshi Imanishi

Abstract: We performed infrared 3-4 micron spectroscopy of > 50 Seyfert galaxies. The nuclear starburst luminosities in dusty tori are quantitatively estimated from the 3.3 micron PAH emission luminosities, a good starburst indicator. We find that nuclear star –

9.2 Contributed Posters:**9.2.1 your ID: 0130**

First Name: Juntai

Last Name: Shen

Affiliation: University of Texas at Austin

Title: Pulsating stellar secondary bars and AGN fueling

Authors: Juntai Shen

Abstract: At least 25% of early-type barred galaxies harbor secondary bars. The dynamics of such double barred galaxies are still not well understood. We recently discovered that the amplitude and pattern speed of secondary bars should be pulsating. Since the bar-within-bar scheme is a potential mechanism of channeling gas to fuel AGN activity, the pulsatory nature of secondary bars may have important implications for understanding the AGN fueling problem.

10 session–Surveys, Future Missions Chairperson: J.-M. Wang

Sat, October 21 —————

- 14:00-14:35 (I) S. N. Zhang (HXMT mission)
- 14:35-14:55 (C) TBD

- 14:55-15:15 (C) TBD
- 15:15-15:35 (C) TBD
- 15:35-16:00 Coffee break and posters

11 session—Summary

- 16:00-16:35 H. Netzer
- 16:35-17:05 A. Fabian