Quasars at all cosmic epochs

Registrants Book

https://www.ict.inaf.it/indico/event/338/

Table of contents

Registrant ID : 31

Prof. BENNERT, Vardha N.

Email: vbennert@calpoly.edu

Institution: California Polytechnic State University San Luis Obispo

Type of contribution: Talk (20 min)

Title: The Origin of the Black Hole Mass Scaling Relations

Abstract: The discovery of close correlations between supermassive BHs and their host-galaxy properties has sparked a flood of observational studies pertaining both to the local Universe and cosmic history over the last decade. Nevertheless, a clear understanding of their origin still eludes us. Uncertainty remains as to the fundamental driver of these relations, whether purely local and baryonic or global and dark matter dominated. While studying the evolution of these relations with cosmic time provides valuable clues, a definitive resolution of this conundrum relies on understanding slope and scatter of local relations for AGNs. We discuss results from a unique three-fold approach. (i) From a sample of ~100 AGNs in the local Universe, we build a robust baseline of the BH mass scaling relations (MBH-sigma, MBH-L, MBH-M), combining spatially-resolved Keck spectroscopy with SDSS imaging. (ii) We study the evolution of the MBH-sigma and MBH-L relations out to a look-back time of 4-6 Gyrs using Keck spectra and HST images. (iii) We extend this study out to the pivotal cosmic time between the peak of AGN activity and the establishment of the present-day Hubble sequence, a look-back time of 8-10 Gyrs. We measure spheroid stellar masses using deep multi-color HST images from GOODS and determine the MBH-M relation. The results (i) indicate that AGNs follow the same scaling relations as inactive galaxies. From (ii-iii) we conclude that BH growth precedes bulge assembly. Combining results from (i-iii) allows us to test the hypothesis that evolution is driven by disks being transformed into bulges.

Grant: yes

Motivation: I am teaching at a purely undergraduate institution with limited funds available for travel to conferences, especially international conferences.

Registrant ID : 35

Prof. D'ONOFRIO, Mauro

Email: mauro.donofrio@unipd.it

Institution: Dep. of Physics & Astronomy, Univ. of Padova

Type of contribution: No contribution

Registrant ID : 36

Dr. FOSCHINI, Luigi

Email: luigi.foschini@brera.inaf.it

Institution: INAF - Osservatorio Astronomico di Brera

Type of contribution: Talk (20 min)

Title: What we talk about when we talk about blazars?

Abstract: After the discovery of powerful relativistic jets from Narrow-Line Seyfert 1 Galaxies and the understanding of their similarity with those of blazars, a problem of terminology was born. The word blazar is today associated to BL Lac Objects and Flat-Spectrum Radio Quasars, which are somehow different from Narrow-Line Seyfert 1 Galaxies. Using the same word for all the three classes of AGN, could drive either toward some misunderstanding or to the oversight of some important characteristics. I review the main characteristics of these sources, and finally I propose a new scheme of classification.

Registrant ID : 32

Dr. KOZLOWSKI, Szymon

Email: simkoz@astrouw.edu.pl

Institution: Warsaw University Observatory

Type of contribution: Talk (20 min)

Title: Understanding optical variability of quasars

Abstract: I will review common methods of quantifying quasar variability, in particular their biases and problems that impact the measured variability parameters. I will provide predictions on quasar science from the forthcoming surveys such as Gaia and LSST, but also concentrate on the results form the already existing OGLE and SDSS data.

Registrant ID : 34

Prof. LIN, Douglas

Email: lin@ucolick.org

Institution: University of California, Santa Cruz, USA

Type of contribution: Talk (20 min)

Title: Planting seeds for gravitational wave generators around active galactic nuclei: Analog of planetary systems around massive black holes.

Abstract: Advanced LIGO event GW150914 has been attributed to the coalescence of two black holes with masses more than double that of most known stellar black holes. Formation of such stellar black holes directly through supernova explosions requires massive, metal-deficient progenitors. This requirement and their nearly equal masses may not be compatible with its occurrence in the local Universe. I consider an alternative possibility which may lead to the robust production of binary black holes with masses up to a hundred solar masses in the proximity of active galactic nuclei (AGN's). I will describe some relevant mechanisms which are analogous to the astrophysics of planet formation. I will discuss the implications of this scenario in the context of structure and evolution of AGN disks including the cause of their super solar metallicity, duty cycle of their active phase, and the rapid growth of their central massive black holes.

Registrant ID : 33

Dr. MARTÍNEZ PAREDES, Mariela

Email: m.martinez@crya.unam.mx

Institution: Instituto de Radioastronomía y Astrofísica de la UNAM

Type of contribution: Talk (20 min)

Title: Looking for the dusty torus in quasars

Abstract: I present the results from study the nuclear near- and mid-IR emission in quasars. We built a sample of 20 nearby quasars (z < 0.1) and obtained high angular resolution data with the 10.4 m Gran Telescopio CANARIAS. We used these IR data to constrain the clumpy dusty torus models, which describe the torus as a clumpy distribution of clouds through six free
parameters (the angular width ■torus, radial extension Y , number of clouds along the equatorial ray N0, radial density distribution q, optical depth V and viewing angle i). A statistical analysis on the geometrical parameters derived, reveals that the properties of the dusty torus are intrinsically different from those of Seyfert 1 nuclei. Nevertheless, in QSOs the combination of the width of torus, number of clouds and inclination results in escape probabilities (Pesc < 5 per cent) and covering factors (f2<0.6) consistent with the optical classification of QSOs as type 1 AGN. Additionally, Higher luminosity QSOs have the lowest covering factor f2. We conclude that the lower number of clouds, steeper radial distribution
and less optically thick clouds in QSOs can be interpreted as dusty structures that have been partly evaporated and piled up by the higher intensity radiation eld in QSOs, as proposed by a receding torus scenario.

Grant: yes

Motivation: I am interested in the grant offered by the meeting because as a postdoctoral fellow of the UNAM I can only cover the expenses of the flight ticket and may be the lodging, but I can not cover the registration. Therefore, I would greatly appreciate the support. This meeting is very important to me due to gives me the opportunity to share with the community the recent results that I have obtained from studying quasars in the infrared using high angular resolution data.