XI SERBIAN CONFERENCE ON SPECTRAL LINE SHAPES IN ASTROPHYSICS
August 21-25, 2017, Šabac, Serbia
Book of Abstracts, Eds. L. Č. Popović, A. Kovačević and S. Simić
Astronomical Observatory Belgrade, 2017

Progress Report

MODELS OF EMISSION LINE PROFILES AND SPECTRAL ENERGY DISTRIBUTIONS TO CHARACTERIZE THE MULTIPLE FREQUENCY PROPERTIES OF ACTIVE GALACTIC NUCLEI

G. La Mura, M. Berton, S. Chen, S. Ciroi, V. Cracco, E. Congiu, M. Frezzato and P. Rafanelli

Dep. of Physics and Astronomy - University of Padua, Vicolo dell'Osservatorio 3, 35122 - Padua, Italy

E-mail: giovanni.lamura@unipd.it

The spectra of Active Galactic Nuclei (AGN) are often characterized by a wealth of emission lines with different profiles and intensity ratios that led to a complicated classification scheme. In addition, the electro-magnetic radiation produced by these objects spans more than 10 orders of magnitude in frequency. AGNs are therefore associated with a much more extended radiation spectrum than the characteristic thermal emission of other quiescent stellar systems. In spite of the striking differences between their various classes, the origin of their activity is generally attributed to a combination of emitting components, surrounding an accreting Super Massive Black Hole, according to a well established Unification Model.

At present, the execution of extensive surveys of the sky, with instruments operating at various frequencies, are providing the attractive possibility to detect and to investigate the properties of AGNs on very large statistical samples. Thanks to the large spectroscopic surveys that, nowadays, allow detailed investigation of many of these sources, we have the opportunity to place new constraints on the nature and evolution of AGNs and to investigate their relations with the host systems. In this contribution we present the results obtained by carrying out a multiple frequency data survey, to investigate the range of AGN spectral energy distributions and we discuss their relations with optical spectra obtained by follow up observations. We compare our findings with the expectations based on the AGN Unification Model, and we discuss the perspectives of multiple wavelength approaches to address the physics of AGN related processes such as black hole accretion and acceleration of relativistic jets.