IV CONFERENCE ON ACTIVE GALACTIC NUCLEI AND GRAVITATIONAL LENSING
November 12-15, 2019, Banja Ždrelo, Serbia
ABSTRACTS OF INVITED LECTURES AND PROGRAMME
Edited by Saša Simić, Luka Č. Popović and Milan S. Dimitrijević
Faculty of Sciences, Department of Physics, Kragujevac 2019

TYPE 1 AGN REVERBERATION MAPPING IN POLARIZED LIGHT

Elena Shablovinskaya, Viktor Afanasiev, Luka Popović

Special Astrophysical Observatory of RAS, Russia
Astronomical Observatory, Volgina 7, 11000 Belgrade

In this talk, we are going to present a new observational method for measurements of the inner dusty torus radius using variability in the polarized broad lines in Type 1 AGNs. The inner radius of the dusty torus is crucial for the investigations of the physical state in the central parsec of AGNs and, moreover, is needed for the supermassive black hole mass estimation with the spectropolarimetric tools (Afanasiev & Popović 2015). Using the fact that polarization in broad lines of Type 1 AGNs is caused by equatorial scattering, we propose to monitor variability in the polarized line flux and finding the time lag between the non-polarized continuum and polarized broad line variability. The method was applied to the observations of Type 1 AGN Mrk 6, and we found that the dusty torus inner part in this AGN is around 100 light days.