Seminarium Astrofizyczne
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Hoża 69 Pawilon; sala 22

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Constraints on the dark energy properties from observations of active galactic nuclei

Dark energy is the greatest puzzle for physicists and astronomers. It is responsible for acceelerating expansion of the Universe. We need more astronomical probes to make sure we actually measure this phenomenon, and that we do it accurately. I propose to use quasars as dark energy tracers. Our main method is based on the determination of the delay between the quasar emission lines and the quasar continuum, which allows to measure directly the size of the emitting region as a light travel time. This size, as we showed in our innovative model of the formation mechanism of this region, depends almost exclusively on the absolute luminosity of a quasar. Knowing the absolute luminosity and measuring – which is simple – the observed luminosity and the redshift of every object we can locate every quasar in a Hubble diagram. For the data, we are using our own monitoring of selected quasars with the 11-m Southern African Large Telescope, as well as other available measurements done by other groups. Particularly attractive data wiill come from the future LSST (Large Synoptic Survey Telscope). The method is still under development but I will discuss the first results and the future prospects.

Serdecznie zapraszam,
Agnieszka Majczyna