

## **Seminarium Astrofizyczne**

wtorek 01.12.2020 godz. **12:30**

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### **Shuo Cao**

(Beijing Normal University, China)

### **Precise tests of General Relativity with ultra-compact radio quasars and strong gravitational lensing**

The recently-built Five hundred meters Aperture Spherical Telescope (FAST), one of whose major scientific goal is to dominate VLBI network and realize high-resolution radio surveys, has opened a new era of radio astronomy in our country. More importantly, our recent works demonstrate that compact structure in intermediate-luminosity radio quasars, a powerful candidate of cosmological standard ruler in the Universe, could serve as an important probe of angular diameter distances at higher redshifts. This provides an important approach for VLBI network to investigate “precision cosmology”, together with a new window to test General Relativity (GR) and directly derive the evolution information of the early universe. On the other hand, strong gravitational lensing, one of the consequences of GR, has also developed into an important astrophysical tool for probing cosmology. In this talk, by focusing on quasars as a cross point, I will explore the possibility of detecting new physics (which deviate from GR and standard model in atomic physics), through the combined observations of compact structure in radio quasars and the quasar-galaxy lensing systems with quasars acting as sources.

Serdecznie zapraszam,

Agnieszka Majczyna