Contribution ID: **67** Type: **not specified**

Probing Axions via Light Circular Polarization and Event Horizon Telescope

Wednesday 28 June 2023 16:00 (20 minutes)

The impact of axion-like particles on the light polarization around the horizon of supermassive black hole (SMBH) is discussed in the light of the latest polarization measurement of the Event Horizon Telescope (EHT). We investigate different sources of the polarization due to axion interaction with photons and the magnetic field of SMBH. These can modify the linear and circular polarization parameters of the emitted light. We have shown that a significant circular polarization can be produced via the photon scattering from the background magnetic field with axions as off-shell particles. This can further constrain the parameter space of ultralight axion-like particles and their couplings with photons.

Author: Dr HAJKARIM, Fazlollah (University of Oklahoma)

Presenter: Dr HAJKARIM, Fazlollah (University of Oklahoma)

Session Classification: Parallel

Track Classification: Particle