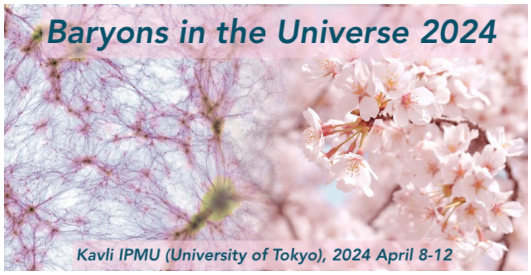

Contribution ID: **26** Type: **not specified**

Probing the impacts of radio-mode feedback on the properties of the CGM

Tuesday, 9 April 2024 15:40 (20 minutes)

Radio-mode feedback from supermassive black holes is expected to impact the evolution of massive galaxies, suppressing star formation and maintaining the heat content of their circumgalactic medium (CGM). However, the effects of this feedback on the cool CGM remain poorly understood. In this talk, I will present our recent study of probing the cool CGM traced by MgII absorption lines around radio galaxies. To this end, we assemble a large statistical sample of approximately 25,000 radio galaxies with background quasars by utilizing the largest spectroscopic dataset from the Dark Energy Spectroscopic Instrument (DESI) survey and a wealth of radio sources detected by two radio surveys, LOFAR and VLASS. Such a large sample enables us to characterize the properties of the CGM around radio galaxies, including absorption line strengths, gas spatial distribution, and gas kinematics. These properties are then compared with those of control galaxy samples without radio emission. I will discuss how our novel measurements can constrain the impact of radio-mode feedback on the baryon distribution in the universe.

Presenter: CHANG, Yu-Ling