Contribution ID: **134** Type: **Talk in the parallel session**

Searching for Lensed Fast Radio Bursts with CHIME/FRB

Monday, 5 July 2021 19:02 (12 minutes)

Gravitational lensing of fast radio bursts (FRBs) on timescales of nanoseconds to milliseconds is sensitive to the presence of massive bodies up to $100M_{\odot}$–including brown dwarves, rogue stars, and exotic objects like MACHOs or primordial black holes. The CHIME telescope, a widefield low-frequency radio interferometer operating over the frequency range of 400-800 MHz, detects several FRBs every day, and I will describe the status of our search for a lensed FRB. Our coherent time-domain search uses data from the CHIME/FRB baseband system and a procedure similar to geodetic VLBI cross-correlation. This allows us to resolve images with 10^{-8} to 10^{-1} second lensing delays, and disentangles intrinsic FRB morphology from genuine multipath propagation induced by a lens.

Primary authors: LEUNG, Calvin; Mr KADER, Zarif (McGill University); Prof. DOBBS, Matt (McGill University); Prof. MASUI, Kiyoshi (MIT)

Presenter: LEUNG, Calvin

Session Classification: What Can We Learn from a Growing Sample of Fast Radio Bursts?

Track Classification: Fast Transients: What can we learn from a growing sample of Fast Radio Bursts?