Contribution ID: **291** Type: **Oral**

Probing Dark Energy with the Canadian Hydrogen Intensity Mapping Experiment (CHIME)

Thursday 10 August 2017 14:30 (15 minutes)

CHIME will use the 21cm emission line of neutral hydrogen to map large-scale structure between redshifts of 0.8 and 2.5. By measuring Baryon Acoustic Oscillations (BAO) we will place constraints on the dark energy equation of state as it begins to dominate the expansion of the Universe, particularly at redshifts poorly probed by current BAO surveys.

In this talk I will introduce CHIME, a transit radio interferometer designed specifically for this purpose. I will discuss its goals and describe the powerful new analysis techniques we have developed to confront the many challenges of such observations, in particular removal of astrophysical foregrounds which are six orders of magnitude larger than the 21cm signal. A smaller 40m x 37m pathfinder telescope is currently operating at the DRAO in Penticton, BC, and the full-sized 80m x 100m instrument will be completed this year. I will report on current progress, and the lessons already learned.

Author: Dr SHAW, Richard (University of British Columbia)

Presenter: Dr SHAW, Richard (University of British Columbia)

Session Classification: Cosmology

Track Classification: Cosmology (incl. neutrino mass/number density)