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Exploring the cosmos with a new paradigm digital telescope

Wednesday 18 June 2014 15:45 (30 minutes)

The Canadian Hydrogen Intensity Mapping Experiment (CHIME) will produce the largest volume astronomical survey to date, potentially unlocking the mysteries the dark-energy driven expansion history of the Universe and providing a revolutionary view of the transient radio sky at unprecedented cadence. The CHIME telescope, currently being designed, commissioned and built in Penticton, BC, is unlike existing radio telescopes. It forms an image of the entire over-head sky each night by digitally processing the information received on a compact array of 2500 radio receivers collecting light from an array of half-pipe shaped cylindrical dishes. Unlike traditional telescopes that mechanically point and observe a small region of the sky, CHIME is able to observes without any moving parts by decoding the information received by the stationary radio receiver array in a powerful digital processing system. I will describe CHIME, its science goals, and theq new era of radio observations that is upon us.

Presenter: DOBBS, Matt (Lawrence Berkeley National Lab. (US))

Session Classification: (W-MEDAL1) CAP Medal Talk - Matt Dobbs, McGill U. (CAP Herzberg Medal Recipient/Récipiendaire de la médaille Herzberg de l'ACP)