



Liju Philip

University of KwaZulu-Natal, Durban

**Searching for cosmic dawn from the
sub-Antarctic**

Tuesday, 2 January 2018, 13:00

Room A304

Observations of the redshifted 21-cm signal of neutral hydrogen can potentially help us probe the uncharted epochs in the universe's history. One such epoch is "cosmic dawn", when the first luminous objects lit up the universe, a few hundred million years after the big bang. The 21-cm spectrum is expected to have a 100 mK absorption feature at a redshift of approximately 20 (frequency of 70 MHz). This dip corresponds to the heating of the ambient neutral hydrogen by the first stars and is observationally undetected to date.

We present preliminary science results from a new global signal experiment called Probing Radio Intensity at high-Z from Marion (PRIZM). PRIZM consists of two antennas with center frequencies of 70 and 100 MHz operating in the 30-200 MHz frequency band. The instrument observes from Marion Island in the southern Indian ocean, halfway between the continents of Africa and Antarctica. The pristine radio-quiet environment of Marion makes it an excellent location for low-frequency observations.