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UNIVERSITÄT BERN

Microwave Physics and Atmospheric Physics

Referent/in/speaker: Leidy Peña Contreras, Universidad de Concepción, Chile

Titel/title: Instrumentation and Atmospheric Characterization for Submillimeter Astronomy: The LCT Project and Water Vapor Radiometers at CePIA

This talk will present two complementary instrumentation efforts currently being developed at CePIA, University of Concepción: the Leighton Chajnantor Telescope (LCT) project and the development of microwave water vapor radiometers for atmospheric characterization. The LCT is a 10.4 m submillimeter telescope being transferred from Hawaii to northern Chile, where it will operate as a platform for submillimeter astronomy, receiver development, engineering validation, and the training of scientists and engineers. Its future deployment in the high-Andes region will exploit the excellent atmospheric conditions of the Atacama Desert, providing a competitive facility for submillimeter astronomy, large-scale surveys, time-domain studies, and the development of new astronomical instrumentation.

The second part of the talk will focus on CePIA's water vapor radiometer program, with emphasis on the 22 GHz prototype and the planned 183 GHz instrument. The 22 GHz radiometer is being developed as a self-calibrated pseudo-correlation system to measure the 22.235 GHz water vapor emission line and retrieve precipitable water vapor information relevant for astronomical observations, supported by ongoing RF/IF component characterization and subsystem validation. The 183 GHz radiometer, currently conceived for high-altitude dry-site monitoring, is expected to provide enhanced sensitivity to the water vapor line and will eventually be integrated into the LCT infrastructure, enabling real-time atmospheric diagnostics to support submillimeter observations.

Zeit/time: Monday, May 18, 2026, 16:15
Ort/place: Room A97