

Seminar über Microwave Physics and Atmospheric Physics

Referent/in: Dr. Mikko Kotiranta, IAP, University of Bern

Titel: Optics for the Submillimeter Wave Instrument on Jupiter Mission JUICE

The Submillimetre Wave Instrument (SWI) is a passive heterodyne radiometer/spectrometer for the JUperiter Icy moons Explorer (JUICE) mission of the European Space Agency. It consists of a 29-cm off-axis Cassegrain antenna and two passively cooled Schottky-mixer receivers tunable in the frequency ranges of 530-625 and 10801275 GHz. This talk presents an overview of the instrument optics that was designed using Gaussian beam mode analysis and physical optics simulations. The functional and environmental requirements for the optical components as well as the challenges related to materials and manufacturing are then discussed. Misalignment to the ideal optical configuration is introduced by component manufacturing tolerances, mounting tolerances during the instrument assembly and thermo-elastic deformation during the operation in space. Methods to prevent such misalignment, to verify its magnitude, and to analyse its effect on the optical performance are presented

Zeit: Freitag, 11.12.2020, 10:15 Uhr

Ort: Zoom Link: <https://unibe-ch.zoom.us/j/97081325603>