

## **Seminar über Microwave Physics and Atmospheric Physics**

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**Titel:** Material Measurements and Design of Antireflection Coatings for 67-115 ALMA Wideband Receiver

The Atacama Large Millimeter/Submillimeter Array (ALMA) will cover a frequency range from 35 to 950 GHz in 10 receiver bands. The first receivers started operation in 2011, but some of the bands still need to be installed. Currently new receivers are being developed for an unusual wide bandwidth from for 67 to 116 GHz. This also presents a special challenge for the design of the anti reflection coating (ARC) of the vacuum window and lens. ESO, Universidad de Chile and IAP are currently investigating different material and design options for this device. This includes the trade-off between High Resistivity Silicon or Ultra-High-Molecular-Weight Polyethylene (UHMWPE), and between ARC geometries with a double layer or linear tapered corrugations. In particular we have measured the loss tangent of Silicon and UHMWPE samples from different suppliers using a free space resonator technique. In this talk we will present the current status of the material measurements, the analytical and full-wave simulations, as well as reflection measurements of the first windows.

**Zeit:** Freitag, 18.10.2019, 10:15 Uhr

**Ort:** **Hörsaal A97**, Gebäude Exakte Wissenschaften, Sidlerstrasse 5, Bern, Schweiz