

Microwave Physics and Atmospheric Physics

Referent/in/speaker: Ir. Dr. Khairayu Bt. Badron, International Islamic University Malaysia

Titel/title: Integrated Satellite Beacon, Disdrometer, and Weather Radar Measurements for Propagation Studies at C-, Ku-, and Ka-Bands

Reliable satellite communication systems operating at frequencies above 10 GHz are increasingly affected by precipitation-induced propagation impairments. This work presents an integrated measurement framework combining satellite beacon observations, disdrometer measurements, and weather radar data to investigate rain attenuation characteristics at C-, Ku-, and Ka-bands. The study analyzes the relationship between rainfall microstructure, rainfall rate, radar reflectivity, and rain height, and evaluates their impact on satellite-to-Earth signal propagation. Results demonstrate the benefits of combining ground-based and remote sensing observations for improving attenuation prediction accuracy and enhancing the design of future satellite and non-terrestrial communication networks. The outcomes support ongoing efforts toward developing robust propagation models for high-frequency satellite systems and next-generation global connectivity services.

Zeit/time: Thursday, June 18, 2026, 13:30

Ort/place: Room A97
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