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Datum: 23.05.2024

Aushang

Einladung zum Seminar über „Nukleare Energieerzeugung“

Zeit: **Montag, 3. Juni 2024, 11:00 Uhr**
Ort: Karlsruher Institut für Technologie, Hermann-von-Helmholtz-Platz 1
76344 Eggenstein-Leopoldshafen, INR, Bau 521, Kolloquiumsraum (R. 302)

Referent: Herr **Dr. Alexander Marek**, Fraunhofer Institute for High Frequency Physics and Radar Techniques FHR, Wachtberg, Germany

Titel: The Space Observation Radar TIRA and the New Fraunhofer-KIT Research Group at IHM

Abstract:
Since the 1970s, Fraunhofer FHR's space observation radar TIRA has established itself as the leading research instrument for near-Earth space observation in Europe. As an experimental system, TIRA is used for the development, investigation, and demonstration of radar procedures and algorithms, particularly in the field of imaging and tracking of space objects. TIRA is equipped with a 34-meter parabolic antenna, an imaging radar in Ku-band, and a tracking radar in L-band, enabling the detection, imaging, and tracking of orbiting objects such as satellites and space debris.
In the context of the miniaturization of satellites and satellite attachments, the development of the latest scientific methods is necessary to enable the imaging of these objects sufficiently well and to examine them in detail. For this reason, the actual research aims to develop a new imaging radar system in the Ka-band, which enables a significantly higher spatial resolution of space objects and also a detailed analysis of the scattering matrix using a new fully polarimetric concept. The use of the Ka-band enables larger bandwidths for a higher spatial resolution than in the Ku-band currently in use.
A part of the Ka-band upgrade is being developed in Karlsruhe in the context of the newly established Fraunhofer-KIT Research Group at the Institute for Pulsed Power and Microwave Technology (IHM). In the research group, we are transferring knowledge and expertise from nuclear fusion research, such as quasi-optical transmission of high power and the development of high-performance vacuum tubes, to radar technology.
In the presentation, we will provide an overview of the TIRA radar system and illustrate how we leverage the expertise gained from nuclear fusion research to develop innovative radar systems.

Hinweis: Alle auswärtigen Besucher des Seminars werden gebeten, ihren gültigen Personalausweis oder Reisepass mitzubringen