



EINLADUNG

zum Vortrag
von

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Technische Universität Wien, Institut für Angewandte Physik

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Dissertation: Novel Insights into Ion-Solid Interaction: Case Studies for Space
Weathering and Nuclear Fusion Research

Betreuer: Univ.-Prof. Dr. Friedrich Aumayr

Novel Insights into Ion-Solid Interaction: Case Studies for Space Weathering and Nuclear Fusion Research

am Dienstag, 24. Oktober 2023, um 17:30 Uhr

Ort: Lise-Meitner-Hörsaal, Fakultät für Physik, Universität Wien,
1090 Wien, Strudlhofgasse 4 / Boltzmannngasse 5, 1. Stock

*Barrierefreier Zugang: Boltzmannngasse 5, Lift, 1. Stock rechts über den Gang zum
Hintereingang des Hörsaals*

Abstract:

Studying the interaction of impacting ions with different materials has a broad background in fundamental and application-focused research. Specifically, the weathering of planets and moons in the solar system and plasma-wall interaction in nuclear fusion reactors represent two highly active research fields. Ion impacts contribute to gas implantation, material damaging as well as surface erosion and these processes are not yet fully understood. In this context, modern experimental and theoretical techniques have allowed vastly improved insights, which will be presented for several examples: Parallel heating and ion-beam analysis experiments allow detailed insights into the retention behavior of the fusion fuel deuterium in the reactor wall material tungsten. Furthermore, microbalance measurements can quantify the erosion of the surfaces of the Moon and Mercury by the solar wind. Detailed knowledge of the ion-surface interaction can even be used for spacecraft-based studies of surface properties, such as the complex grain structures at the surface of the Moon.

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