

Tuesday, 23rd Oct. 2018, 16:00 s.t.

TU Wien, Institut für Angewandte Physik, E134
1040 Wien, Wiedner Hauptstraße 8-10
Yellow Tower „B“, 5th floor, SEM.R. DB gelb 05 B



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Sputtering of Mercury and Moon Analogue Material by Solar Wind Ions

The formation of thin exospheres around planets or moons is a very important topic in planetary sciences. Sputtering by solar wind ions plays an essential role for the emission of particles from the surface. To get a better understanding of this process, sputtering experiments with the Quartz Crystal Microbalance (QCM) technique were performed using the mineral Wollastonite (CaSiO_3) as an analogue target for the surface of Moon or Mercury. Kinetic sputtering effects were investigated under different angles of incidence and agreed very well with predictions from simulation codes. Potential sputtering by ions with higher charge states was found to significantly increase the sputtering yield, showing the importance of heavy, multiply charged ions in the solar wind.

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Ion beam spectroscopy of 2D materials

Materials with a thickness of only one atomic layer attracted the attention of theoretical as well as experimental scientist since their first discovery. Due to their unique electronic and optical properties and their high flexibility, 2D materials rapidly made their way as promising candidates into various fields of applications. As a result, more and more monolayer materials are appearing, whereas still their properties have to be investigated in more detail. With an ion beam spectrometer, charge and energy transfer between highly charged ions and monolayer materials with different properties are measured. Therefore, the response of semi-metal graphene as well as semiconducting molybdenum disulfide to a strong and localized electric field can be probed.

All interested colleagues are welcome to this seminar lecture(s) (2 x 20 min. presentations followed by discussion)

Friedrich Aumayr
(LVA Leiter und Seminar Chair)