

Tuesday, 9<sup>th</sup> Jan. 2023, 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



## Lidija Radovanovic

*Institute of Applied Physics*  
*TU Wien, Vienna, Austria*



### Exploring the influence of plasma triangularity on pedestal stability and structure in ASDEX Upgrade

The confinement and the performance of a tokamak plasma in the high confinement regime are closely related to the structure of the plasma edge region, the so-called pedestal. In this region, density and temperature of the plasma drastically drop, acting as an insulator for the core of a fusion plasma. One possible factor limiting the pedestal width is the onset of instabilities, kinetic ballooning modes, at the top of the pedestal which we approximate by local ideal ballooning modes. The stability of these modes can be altered by varying the plasma shape. The results show that different physical mechanisms influence the pedestal width of electrons and ions with respect to their density and temperature. These individual effects are nevertheless conditioned by the overall limit on the total pressure, set by the ideal magnetohydrodynamic (MHD) stability.

## Martina Fellingner

*Institute of Applied Physics*  
*TU Wien, Vienna, Austria*



### Retention of fusion fuel in first wall materials: Influence of re-deposited tungsten on retention in Eurofer97 films

The performance and the efficiency of nuclear fusion reactors are strongly influenced by retention of fusion fuel within the surrounding walls. Retention in these so-called plasma facing components (PFC) therefore needs to be investigated and quantified. Two promising material candidates for PFCs are W and a low activation steel alloy, Eurofer97. We investigated the influence of re-deposited W on Eurofer97 layers on the retention of D inside the material. Comparable temperature desorption spectroscopy (TDS) experiments were performed for cases with and without re-deposited W. Quantification was achieved by using Ion Beam Analysis (IBA) techniques. Results show that re-deposited W functions as an outgassing barrier for D retained in the Eurofer97 layer below.

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

Friedrich Aumayr  
(LVA Leiter)

Richard A. Wilhelm  
(Seminar Chair)