GROSS AND NET EROSION BALANCE OF PLASMA-FACING MATERIALS IN FULL-W TOKAMAKS

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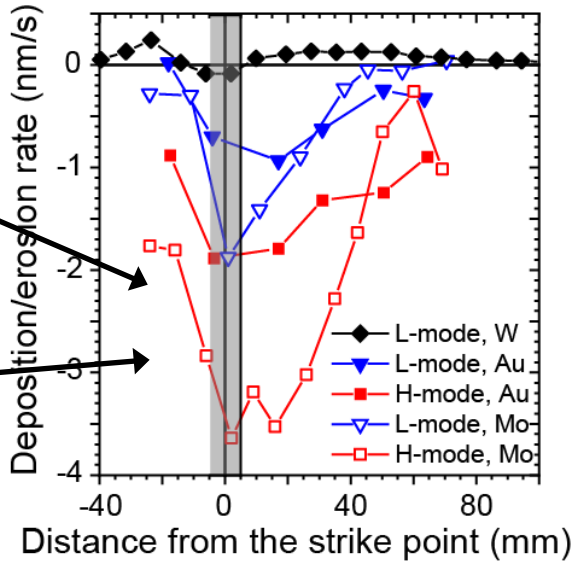
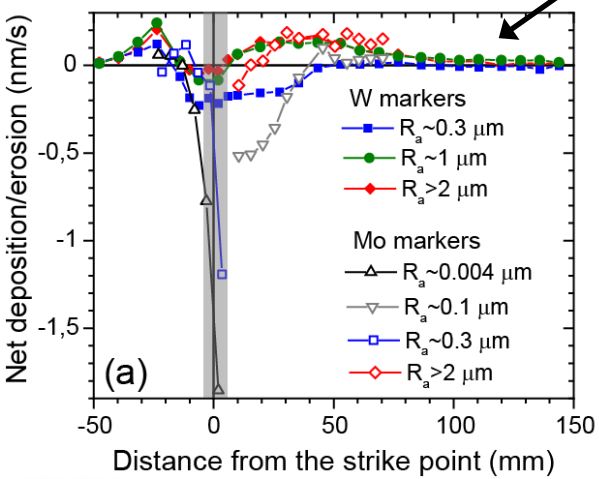
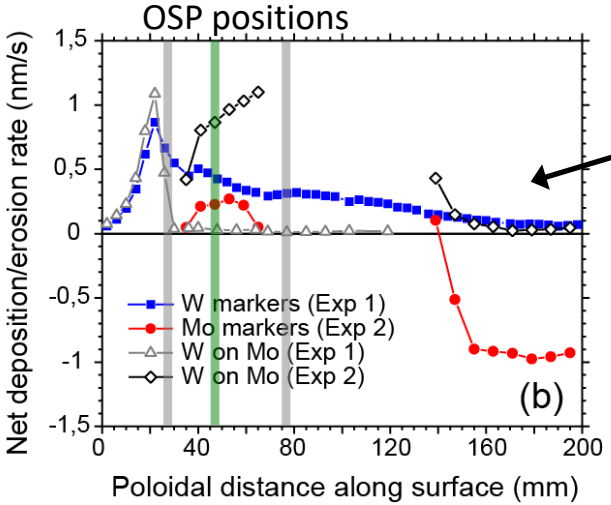
Studies carried out on **ASDEX Upgrade and WEST, in L- and H-mode and in D and He plasmas**

Focus on **low-field-side (outer) strike-point region (OSP)**

- Net erosion at the OSP depends largely on the **material and electron temperature**, impurities mainly lead to the formation of **thick co-deposited layers**
- In H-mode plasmas, gross erosion during ELMs can be 10-100 times larger than in L-mode while **net erosion is enhanced by a factor of 2-3**
- The **rougher the surface, the more will net erosion be suppressed** and the thicker co-deposited layers can be measured on the PFCs







- In He plasmas, **gross erosion increased** compared to D but strong impurity fluxes **can easily turn erosion into apparent net deposition**
- The data from AUG and WEST are consistent → **estimated net-erosion rates <0.1 nm/s**