

# Multiscale modelling of sheath physics in edge transport codes

- The surface and sheath effects on the plasma parameters in the vicinity on the divertor wall have been studied with Soledge2D-EIRENE.
- The base case is the partially detached shot #83559 in JET.
- Impact angles and energies have been calculated with a 1D PIC code:
  - Increase of  $T_i$  as the energy reflection coefficient is increased with the much grazing incidence of particle ( $\sim 20^\circ$  with respect to the surface) in comparison to the original model in EIRENE with almost normal incidence.
  - The average impact angle and energy is already in a good agreement with the full distributions.
- Strong effect of the reflection database at low impact energy when the surface binding energy is modified (SBE=5.53 instead of SBE=1).
- A simple model of surface roughness has been implemented and a strong reduction of  $T_i$  close to the inner strike point has been observed.