Investigation of mechanisms for the generation of blobs/holes at the boundary of the HL-2A tokamak (O Pan, Y Xu* et al., EX/P7-29)

Three distinctive regions for blob and hole generation mechanisms:
(i) inside the LCFS, the local density gradient is high and blobs are driven by drift-wave turbulence;
(ii) outside but nearby the LCFS, blobs and holes coexist. Evidence show interchange drive mechanisms;
(iii) in the far SOL, the density gradient is very low, the turbulence spreading plays a key role for blob dynamics.

In the hole-dominant region, the turbulence transfers energy into the $E \times B$ flow. Thus, the inward convection of holes fades in the vicinity of the LCFS.