

Experimental validation on plasma blob formation Mechanism

- Plasma blob formation is due to the breaking process of a radially elongated streamer due to the poloidal and radial velocity shear.
- In this work, we report the first ever experimental validation of this universal criterion by testing it against NSTX data on blobs obtained using the gas-puff imaging (GPI) diagnostics.
- The criterion is widely satisfied in most L-mode discharges and may explain the predominance of blobs in such a regime compared to the H-mode.
- We also validate the theoretical criterion using Aditya Langmuir probe data taken in the edge and SOL regions in L-mode plasma.