

1. First demonstration of controlling or mitigating gas puff induced 'disruptions' in discharges with $I_p \sim 65-70$ kA with biasing voltage of more than $\sim 180-190$ V to an electrode placed inside the last closed flux surface (LCFS) successfully by suppressing the MHD modes.
2. In this experiment sheared poloidal plasma rotation generated by biased electrode in the vicinity of $m/n = 3/1$ island through $E_r \times B_\phi$ flow is seen to be profoundly stabilize magnetic islands corresponding to $m/n = 3/1, 2/1$ and $1/1$ MHD modes.
3. The mechanism for the stabilization of tearing modes in this method lies into generation of poloidal flow shear more than the magnetic shear near $q=3$ rational surface [1].
4. A possible reason for the stabilization in the $m = 2$ and $m = 1$ modes may be toroidal coupling as ADITYA tokamak has not very large aspect ratio.

References:

[1] DHYANI, Pravesh, et al., A novel approach for mitigating disruptions using biased electrode in ADITYA tokamak, Nuclear Fusion **54** (2014) 083023.