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## Observation/Study of Lock mode characteristics in SST-1 plasma

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Steady State Superconducting Tokamak (SST-1) is a medium size operational Tokamak (major radius=1.1m, minor radius=0.2m) at the Institute for Plasma Research (IPR), India [1]. In the recent experimental campaign, SST-1 has successfully achieved plasma current in order of 100kA and plasma duration in excess of ~330ms at a central magnetic field of 1.5T. An attempt has made to observe/study the behavior of the magneto-hydrodynamic (MHD) activity during different phases (Ramp-Up, Flat-Top and Ramp-down) of plasma pulse which leads to major/minor disruptions, its present mode (poloidal/toroidal mode number i.e. m=2, n=1)[2,6] and impact on plasma confinement (i.e. confinement degrades or discharge terminates permanently) using experimental data from Mirnov probes. Statistical observation on mode lock instabilities encourages studying the characteristics of field errors influencing the mode rotations and its co-relation with drift frequencies [3,5] for plasmas at SST-1. Observed lock mode characteristics have also been correlated with diagnostics (i.e. ECE, Density, X-Ray systems etc.) and heating system (ECRH) for prior and post PFC (Plasma Facing Components) campaigns of SST-1.

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## Primary author: Mrs BHANDARKAR, MANISHA (Institute for Plasma Research)

**Co-authors:** Mr DHONGDE, JASRAJ (Institute for Plasma Research); Dr PRADHAN, Subrata (Institute for Plasma Research, Bhat, Gandhinagar 382428, Gujarat, India)

**Presenter:** Mr DHONGDE, JASRAJ (Institute for Plasma Research)

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