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The study of mode instability in rotamak plasmas driven by rotating magnetic field XIAOKANG YANG, JERMAIN GOSS, DHARAH KALARIA, SAEID HOUSHMANDYAR, TIAN-SEN HUANG, Prairie View A&M University — The instability modes, which include the n = 1 tilt, radial shift and kink-like mode, have been observed in rotamak plasma through the measurements of Mirnov coil array and the images of a high speed CCD camera. The effect of three instability modes on plasma discharge is completely different: plasma current can be decreased, terminated and enhanced respectively by tilt, radial shift and kink-like mode. Experiments clearly demonstrate that the appearance and suppression of instability modes strongly depends on the configuration and the strength of magnetic field (X. Yang, et al, Phys. Rev. Lett. **102**, 255004 (2009)). Mode switching also has been observed in disruptive discharges.

Xiaokang Yang
Prairie View A&M University

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