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**E X B instability with sheared magnetic field** SALIL DAS, Prince Georges Community College, SHAHIN NASRIN, MRIDUL BOSE, Jadavpur University — The cross-field instability is ubiquitous in all electromagnetic systems. Effect of this instability is studied rigorously in plasma system with steady external magnetic field. Therefore, we have considered a sheared magnetic field to study the E X B instability which is observed in the internal transport barrier of fusion machines. Depending on the relation between  $y$  &  $L_S$  we have considered three different regimes. The response of the magnetic shear, i.e.  $y/L_S$ , (where,  $y$  is the magnitude of the applied magnetic field along  $y$ -direction and  $L_S$  is the shear length) is then estimated which shows few interesting features.

Salil Das  
Prince Georges Community College

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