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**Features of ITG Modes in the RFP** VARUN TANGRI, P.W. TERRY,  
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Global tearing modes, which normally dominate core transport in the RFP, are  
largely stabilized when the current profile is externally controlled. This allows small-  
scale modes to become a significant factor in RFP confinement, both global confine-  
ment and edge particle confinement. The driving source of the small-scale modes  
observed in the RFP has never been determined. Drift modes, resistive g-modes,  
and rippling modes are too weak in the strong magnetic shear to explain observa-  
tions. We examine here the linear stability of the ion temperature gradient mode,  
Using GYRO [1] in a low beta, collisionless limit, linear gyrokinetic simulations in  
real toroidal RFP geometry have been performed. To benchmark and assess the  
results we make comparisons with fluid theory and prior calculations. To determine  
the nature of the instability we study parametric scalings and mode structure. We  
evaluate growth rates for MST parameters, and using mixing length arguments, de-  
termine if the instability is relevant to the small-scale turbulence observed in MST.

[1] J. Candy and R.E. Waltz, J. Comp. Phys. 186, 545 (2003).

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