

Abstract Submitted
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Critically balanced ITG turbulence¹ FELIX I. PARRA², CHRISTIAN YOO, MICHAEL BARNES³, JUNGPYO LEE⁴, Massachusetts Institute of Technology — It has been shown that strong ITG turbulence is critically balanced [1], that is, the sound wave propagation time along the magnetic field line is of the order of the nonlinear eddy turnover time (determined by the nonlinear physics) at every scale of the system. In the cases considered in [1], critical balance, coupled with the assumption that the connection length limits the longest parallel wavelength in the system, determined the perpendicular size of the largest eddies in the system [1]. We show that near marginal stability, the analysis in [1] must be modified: while critical balance is still satisfied, the perpendicular size of the largest eddies is determined by the linear physics, placing a constraint on the longest parallel wavelength of the turbulence. **References.** [1] M. Barnes, F.I. Parra and A.A. Schekochihin, *Phys. Rev. Lett.* **107**, 115003 (2011)

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