

Abstract Submitted
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Effects of Triangularity on Ion Temperature Gradient Turbulence Saturation¹ JOEY DUFF, BENJAMIN FABER, CHRIS HEGNA, University of Wisconsin - Madison — In this work, we model how changing the triangularity (both positive and negative) of an axisymmetric flux surface affects ion temperature gradient (ITG) turbulence saturation. Emphasis is placed on understanding quantitative difference between predictions from both quasilinear estimates and nonlinear gyrokinetic simulations of ion heat fluxes. A fluid model is used to study the saturation mechanisms of unstable modes through coupling to stables via three-wave interactions [1]. Using the gyrokinetics code GENE, linear and nonlinear behavior of ITG turbulence were compared among each geometry. Quasilinear and nonlinear heat fluxes qualitatively differed, but both methods of heat flux estimation revealed a decrease in heat flux with both enhanced positive or negative triangularity. [1] Hegna et al. PoP, 25, 022511 (2018)

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