Alfven eigenmode stability and energetic particle transport using the TGLF model[1] HE SHENG, Peking University, R.E. WALTZ, G.M. STAEBLER, General Atomics — The Trapped Gyro-Landau-Fluid (TGLF) transport model is a physically realistic and comprehensive theory based local quasilinear transport model fitted to linear and nonlinear GYRO gyrokinetic simulations [1]. This work presents the first use of the TGLF model to treat low-n Alfven eigenmode (AE) stability and energetic particle (EP) transport. TGLF accurately recovers the GYRO TAE and EPM mode linear growth and frequency rates for the fusion alpha case in Ref. [2]. TGLF is being set-up to quickly find the critical EP gradient profile for stiff AE EP transport based on the AE linear threshold conditions given the background plasma profiles in DIII-D [3]. The TGLF model for passive EP transport from high-n ITG/TEM micro-turbulence is compared with previous models. [1] G. M. Staebler, J. E. Kinsey, and R. E. Waltz, Phys. Plasmas 14, 055909 (2007). [2] E. M. Bass and R.E. Waltz, Phys. Plasmas 17, 112319 (2010). [3] R.E. Waltz, E.M. Bass, W.W. Heidbrink and M.A. VanZeeland, Nucl. Fusion 55, 123002 (2015).

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