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**Superbanana plateau regime for neoclassical toroidal plasma viscosity in tokamaks** K.C. SHAING, Plasma and Space Science Center and Physics Department, National Cheng Kung University, S.A. SABBAGH, Columbia University, M. CHU, General Atomics — Neoclassical toroidal plasma viscosity is found to be important in modeling toroidal plasma rotation in tokamaks that have error fields and magnetohydrodynamic (MHD) activities. The most important regime in fusion grade tokamaks is probably the collisionless regime. In the collisionless regime, where the effective collision frequency for the bananas is less than the  $\mathbf{E} \times \mathbf{B}$  drift frequency, it is assumed in calculating toroidal plasma viscosity that the  $\mathbf{E} \times \mathbf{B}$  drift frequency is larger than the grad  $B$  and the curvature drift so that the resonance between these two types of drift cannot occur. Here such an assumption is removed. The new physics introduced is that the resonance between the  $\mathbf{E} \times \mathbf{B}$  drift frequency and the grad  $B$  and the curvature drift is now allowed. This leads to the superbanana plateau regime. The result can be used for the arbitrary value of the radial electric field in the modeling of the plasma rotation when the toroidal symmetry is broken in tokamaks.

K. C. Shaing  
National Cheng Kung University

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