

Abstract Submitted  
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**Rapid Frequency Chirps of TAE mode due to Finite Orbit Energetic Particles** HERB BERK, IFS, University of Texas at Austin, GE WANG, Princeton Plasma Physics Laboratory — The tip model for the TAE mode in the large aspect ratio limit, conceived by Rosenbluth et. al. [1] in the frequency domain, together with an interaction term in the frequency domain based on a map model [2], has been extended into the time domain. We present the formal basis for the model, starting with the Lagrangian for the particle wave interaction. We shall discuss the formal nonlinear time domain problem and the procedure that needs to obtain solutions in the adiabatic limit.

[1] M.N. Rosenbluth, et. al. Phys. Fluids B, **4**, 2189, (1992)

[2] Berk, H.L., Breizman, B.N. and Ye, H. Phys. Fluids B, **5**,1506, 1993

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