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Particle Simulations of Collisionless Magnetic Reconnection in Turbulent Medium H. KARIMABADI, UCSD, W. DAUGHTON, V. ROYTERSHTEYN, LANL, J. SCUDDER, U. of Iowa — Many instances of reconnection occur in systems where turbulence is ubiquitous. Examples include solar wind, dayside magnetopause, coronal heating of turbulent accretion disks, the dynamo in the sun's convection zone, and turbulent tokamak plasmas during disruptions. The studies of reconnection in turbulent medium has been traditionally based on resistive MHD and Hall MHD limits but to the best of our knowledge we are not aware of any fully kinetic treatment of this problem. Here we present the first kinetic simulations of reconnection in turbulent medium where the effects of turbulence is modeled through wave-particle scattering. A comparison of the results with simulations with binary collisions is presented. We show results as a function of turbulence level and demonstrate the changes in the reconnection layer and associated reconnection rates.

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