Directional change of particles in dissipative drift-wave turbulence[1] BENJAMIN KADOCH, IUSTI, Aix-Marseille Université, Marseille, France, WOUTER J.T. BOS, LMFA, CNRS, Ecole Centrale de Lyon, Université de Lyon, Ecully, France, KAI SCHNEIDER, I2M-CNRS, Centre de Mathématiques et d'Informatique, Aix-Marseille Université, Marseille, France — We analyze the statistical properties of Lagrangian particle transport in dissipative drift-wave turbulence modeled by the Hasegawa-Wakatani system. The angle between subsequent particle displacement increments is evaluated as a function of the timelag and thus multiscale geometric statistics can be performed [Bos et a., PRL, 114, 214502, 2015]. The evolution of the mean angle with the time lag is studied and the probability density function of the directional change are analyzed for the different flow regimes. By varying the adiabaticity parameter the flow regime can be modified from the hydrodynamic limit to a geostrophic limit, including the quasi adiabatic regime which has some relevance for edge turbulence of fusion plasmas in tokamaks.

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