

Abstract Submitted  
for the DPP12 Meeting of  
The American Physical Society

**Transport properties and radiation production in plasmas with sub-Larmor-scale magnetic turbulence**<sup>1</sup> B. KEENAN, M.V. MEDVEDEV, University of Kansas — Kinetic streaming instabilities, such as the Weibel instability, occur in various plasma setups. It has earlier been proposed that radiation emitted by relativistic electrons, called jitter radiation, during the field generation and its subsequent self-similar evolution and self-organization can deliver wealth of information about the internal structure of “Weibel turbulence.” The small-scale fields simultaneously affect the particle transport via pitch-angle diffusion and the radiation production and its spectra. Both effects are related and can be used to diagnose the plasma state. Indeed, the radiation pattern is intimately related to the particle orbits and, thus, to the transport properties of the turbulence. We study such a relation between transport and radiation in sub-Larmor-scale turbulence numerical simulations and analysis. We discuss how our results will improve the radiative diagnostic technique of lab and astro HED plasmas.

<sup>1</sup>Supported by grants DE-FG02-07ER54940.

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Date submitted: 12 Jul 2012

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