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**Radiation from Weibel turbulence with PIC simulations**<sup>1</sup> MICHAEL SITARZ, MIKHAIL MEDVEDEV, University of Kansas, ALEXAN-DER PHILIPPOV, Flatiron Institute — The filamentation (e.g., Weibel) instability is typical of high-energy-density environments like laser-produced and astrophysical plasmas, such as in collisionless shocks of gamma-ray bursts and supernovae, accretion shocks in galaxy clusters and others. It is generated in unmagnetized (or weakly-magnetized) plasmas with an anisotropic temperature, or, generally, with anisotropic particle distribution function. Radiation from the Weibel-generated, sub-Larmor-scale magnetic fields, known as the jitter radiation, differs significantly from the cyclotron or synchrotron radiation. In particular, its spectrum carries wealth of information about the magnetic field properties as is shown in both theoretical and numerical studies. Our goal here is to study such radiation from the first principles using the state-of-the-art PIC simulations. Here we discuss the techniques and some tentative results of the project.

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