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Radiation of electrons in Weibel-generated fields. – A general case.[1] MIKHAIL MEDVEDEV, University of Kansas — Weibel instability turns out to be the a ubiquitous phenomenon in High-Energy Density environments, ranging from astrophysical sources, e.g., gamma-ray bursts, to laboratory experiments involving laser-rpoduced plasmas. Relativistic particles (electrons) radiate in the Weibel-produced magnetic fields in the Jitter regime. Conventionally, in this regime, the particle deflections are considered to be smaller than the relativistic beaming angle of $1/\gamma$ (γ being the Lorentz factor of an emitting particle) and the particle distribution is assumed to be isotropic. This is a relatively idealized situation as far as lab experiments are concerned. We relax both assumptions (i.e., the smallness of the deflection angle and the isotropy of radiating particles) and present the extension of the jitter theory amenable for comparisons with experimental data.

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