

# **Biermann battery effects on the magnetic field amplification by KH (Kelvin-Helmholtz) and RT (Rayleigh-Taylor) instabilities**

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Magnetic field amplification by KH and RT instabilities in counter-streaming plasma jets induced by high-power lasers in a configuration similar to the one taken by Tzeferacos et al. [1] is investigated by using the FLASH code. The cases with and without Biermann battery term for the KH and RT instabilities are compared. It is shown that the case of the KH instability with the Biermann effect shows the highest magnetic field, which indicates that the Biermann term can play an important role in turbulence magnetic field amplification. Detailed simulation results from a linear instability stage to the fully developed turbulence are presented.

[1] Tzeferacos et al., Numerical modelling of laser-driven experiments aiming to demonstrate magnetic field amplification via turbulent dynamo, *Phys. Plasmas* **24**, 041404 (2017).