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Kinetic inhibition of MHDshocks in the vicinity of a parallel magnetic field ANTOINE BRET, Univ de Castilla-La Mancha, ASAF PE'ER, Physics Department, University College Cork, Cork, Ireland, LORENZO SIRONI, Department of Astronomy, Columbia University, New York, NY 10027, USA, RAMESH NARAYAN, Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, MA 02138, USA — According to MHD, the encounter of two collisional magnetized plasmas at high velocity gives rise to shock waves. Investigations conducted so far have found that the same conclusion still holds in the case of collisionless plasmas. For the case of a flow-aligned field, MHD stipulates that the field and the fluid are disconnected, so that the shock produced is independent of the field. We present a violation of this MHD prediction when considering the encounter of two cold pair plasmas along a flow-aligned magnetic field. As the guiding magnetic field grows, isotropization is progressively suppressed, resulting in a strong influence of the field on the resulting structure. A micro-physics analysis allows us to understand the mechanisms at work. Particle-in-cell simulations also support our conclusions and show that the results are not restricted to a strictly parallel field. [Bret at al., Journal of Plasma Phys. (2017), vol. 83, 715830201]

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