Abstract Submitted
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Kinetic energy in Richtmyer-Meshkov like flows[1] JUAN GUSTAVO WOUCHUK, FRANCISCO COBOS-CAMPOS, ETSII - Edificio Politecnico - INEI and CYTEMA, Campus s/n (13071) University of Castilla-La Mancha - Ciudad Real, Spain — Richtmyer-Meshkov (RM) flows are driven by corrugated shocks/rarefactions. Those flows are characterized by acoustic, entropic and vorticity perturbations. Hence, the velocity perturbations are essentially rotational for moderate levels of compression. The vorticity distributed inside the compressed fluids is important to quantify the asymptotic linear velocities at the contact/piston surfaces that drive the shocks as well as to calculate the asymptotic velocity profiles in the compressed fluids. Usually, the vortices nearest to the piston/contact surface are the strongest and contain a significant amount of rotational kinetic energy. The size of the strongest vortices is analyzed as a function of the compression level [1] and the kinetic energy stored inside the vorticity field is also calculated. The calculations are done at first for different boundary conditions downstream in a single fluid: isolated shock, rigid piston and free surface. Besides, the kinetic energy in the classical RM environments with two fluids is also analyzed. [1] J. G. Wouchuk and F. Cobos-Campos, Plasma Phys. Contr. Fusion **59**, 014033 (2017).

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