

Abstract Submitted  
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**Vlasov-Fokker-Planck modeling of High Energy Density Plasmas<sup>1</sup>**

MICHAIL TZOUFRAS, ADAM TABLEMAN, WARREN MORI, UCLA — Vlasov-Fokker-Planck simulations can be applied to a wide variety of problems in High-Energy-Density Plasmas. They can be used with an explicit solver to study the physics of waves in plasma media, including Landau Damping, echoes, instabilities etc., just like standard Vlasov codes. Moreover, they allow us to study the effect of collisions on these kinetic phenomena. On the other had, using an implicit solver, they enable kinetic simulations of realistic temporal and spatial scales. Recent simulations with the VFP code OSHUN [1] will be presented for all of the aforementioned problems. The algorithmic improvements that have facilitated these studies will be also be discussed.

[1] M. Tzoufras, A.R. Bell, P.A. Norreys, F.S. Tsung, JCP 230 (17), 6475-6494 (2011); M. Tzoufras, A. Tableman, F.S. Tsung, W.B. Mori, A.R. Bell, Phys. Plasmas 20, 056303 (2013)

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