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WITHDRAWN–Molecular dynamics simulations of transport in highly asymmetric plasma mixtures: Application to double-shell ignition targets SORIN BASTEA, HARRY ROBEY, PETER AMENDT, LLNL — Dense plasma mixtures are often encountered in the study of inertial confinement fusion (ICF) and in many astrophysical environments. Evaluating the associated transport coefficients is important for understanding the performance of ICF targets, in particular double-shell ignition target designs [1]. However, such an assessment is often very difficult when the mixed plasma is highly asymmetric in charge and mass, as in the DT fuel and Au pusher of an ignition double shell. We present molecular dynamics simulation results [2] for the viscosity and mutual diffusion of a DT/Au mixture after deceleration onset, modeled as a binary ionic mixture. Compared with previous one-component plasma models [3], the predicted viscosity and mutual diffusivity are considerably higher and tend to reduce the Rayleigh-Taylor instability growth rates based on the model of Duff, Harlow and Hirt [4]. Mode cutoffs near 10^3 are predicted on the fuel-pusher interface, leading to the prospect of realistic multimode simulations of instability growth. [1[P. Amendt et al., Phys. Plasmas **9**, 2221 (2002). [2] S. Bastea, Phys. Rev. E **71**, 056405 (2005). [3] J.G. Clérouin, M.H. Cherfi, G. Zérah, Europhys. Lett. **42**, 37 (1998). [4] R.E. Duff, F.H. Harlow, C.W. Hirt, Phys. Fluids **5**, 417 (1962). This work was performed under the auspices of the U.S. Department of Energy by the University of California Lawrence Livermore National Laboratory under Contract No. W-7405-Eng-48.

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