**The stability of freely-propagating ion acoustic waves in 2D systems**[1] THOMAS CHAPMAN, RICHARD BERGER, JEFFREY BANKS, LLNL, STEPHAN BRUNNER, EPFL, Switzerland — The stability of a freely-propagating ion acoustic wave (IAW) is a basic science problem that is made difficult by the need to resolve electron kinetic effects over a timescale that greatly exceeds the IAW period during numerical simulation. Recent results examining IAW stability using a 1D+1V Vlasov-Poisson solver indicate that instability is a fundamental property of IAWs that occurs over most if not all of the parameter space of relevance to ICF experiments [1]. We present here new results addressing the fundamental question of IAW stability across a broad range of plasma conditions in a 2D+2V system using LOKI [2,3], ranging from a regime of relatively weak to a regime of relatively strong ion kinetic effects.

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