

Abstract Submitted
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ePLAS code improvements for short pulse laser-matter interaction studies¹ R.J. MASON, J. AMBROSIANO, W. ATCHISON, R. FAEHL, D. HENDERSON, R. KIRKPATRICK, Research Applications Corp, D. BARNES, Coronado Consulting — We detail new features for ePLAS, a 2D implicit/hybrid simulation model in use for Fast Ignition. The hybrid/PIC code tracks laser light with ponderomotive force, depositing at critical into relativistic hot particle electrons, while pulling cold collisional, return-current Van Leer fluid electrons through fluid ions by means of self-consistent Implicit Moment² E - and B -fields. The new features include: a 1D formulation for light absorption studies with generalized E - and B - fields, multiple laser beams, real EOS data from analytic models or the Sesame tables, K_α imaging, generalized cold electron elevation to hots, particle ions for fast ion fusion, improved graphical options, and new Linux and Mac OS X implementations. The focus of the talk is code enhancements.

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²R. J. Mason, J. Comp. Phys. **71**, 429 (1987).

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