Abstract Submitted
for the DPP19 Meeting of
The American Physical Society

Bringing Research Codes into the Classroom: A Case Study with Particle-In-Cell and Vlasov-Fokker-Planck Codes B. J. WINJUM, H. WEN, K. MILLER, S. CHASE, Y. ZHAO, W. AN, F. S. TSUNG, W. B. MORI, UCLA, J. VIEIRA, R. FONSECA, IST — The codes that serve plasma physics researchers could benefit a broad and diverse group of students and teachers, particularly when incorporated into narratives that include text, equations, interactive visualizations, and multimedia elements. Teachers and beginning students could potentially benefit from simulation output that illustrates fundamental concepts. Advanced students could benefit from simulations that reproduce classic research articles. Budding computational scientists could benefit from an illustration of the consequences of using different codes, different algorithms, or different parallelization strategies. Even researchers could benefit from clear and interactive educational material that enriches their current understanding which in turn rapidly leads to new research directions. Here we show how we are using Jupyter tools to create interactive educational narratives that utilize particle-in-cell and Vlasov-Fokker-Planck software for each group above.

Benjamin Winjum
UCLA

Date submitted: 03 Jul 2019 Electronic form version 1.4