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Improving IPPL: a performance portable library for grids and particles

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Independent Parallel Particle Layer (IPPL) is an open-source performance portable C++ library for generic computations with grids and particles. It is primarily used for large scale kinetic plasma simulations. In this talk, I will briefly introduce the library, and show some of the recent benchmarks we performed on pre-exascale leadership computing systems with thousands of GPUS and CPU cores. I will then discuss the features we would like to have in IPPL in the areas of I/O, in-situ visualization and performance measurement tools which can open the door for potential collaborations.

JLESC topic

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