PHARE - helioplasma modeling with adaptive mesh refinement

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Résumé

PHARE is a multi-formalism Adaptive Mesh Refinement (AMR) numerical framework developed at LPP for the helio-plasma community. The code solves Hybrid-PIC, Hall-MHD, and resistive MHD equations on a dynamical hierarchy of uniform Cartesian grids with incrementally finer spatial and temporal resolution. Key features of the current roadmap include the coupling of these formalisms within a single AMR hierarchy and the modeling of planetary magnetospheres. This presentation outlines the code's current capabilities and development roadmap, with the goal of fostering new collaborations regarding its usage.

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