

Abstract Submitted
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FLASH Capabilities, Architecture, and Future Directions¹ A. DUBEY, U. Chicago, E. BALARAS, U. Maryland, S. COUCH, C. DALEY, S. GOPAL, C. GRAZIANI, D. LAMB, D. LEE, U. Chicago, M. VANELLA, U. Maryland, K. WEIDE, G. XIA, U. Chicago — FLASH is a publicly available, high-performance, modular, extensible Eulerian hydrodynamic code. It has been used for simulating Type Ia supernovae, X-ray bursts, turbulence, cosmology and other applications. FLASH consists of inter-operable modules that can be combined to generate different applications. This flexible architecture allows many interchangeable co-existing alternative implementations of its components. Further, a simple mechanism exists for customization of code functionality without the need to modify the core implementation. A collection of unit and regression tests provides verifiability, and a rigorous software maintenance process enables efficient code distribution and management. Recently, we have been expanding the capabilities of FLASH to include high energy density physics and fluid structure interactions. In this poster, we present various directions for the growth of FLASH in the near and distant future, and its architectural features that make such expansion possible.

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