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A task-based parallel elliptic solver based on discontinuous-Galerkin methods

Wednesday, 27 July 2022 12:30 (15 minutes)

The solution of elliptic equations is an integral part of computational physics. This talk presents a new elliptic solver which is based on a discontinuous Galerkin scheme applicable to a wide class of elliptic partial differential equations. The solver is employing task-based parallelism and scales to a few thousand of compute cores. We show applications to the construction of initial data for binary black holes and to the study of thermal noise in the mirrors of interferometric gravitational wave detectors.

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Session Classification: Short talks