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Parallel Performance of a Two-Level ASPIN Algorithm

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Abstract: The one-level nonlinear additive preconditioned inexact Newton method (ASPIN1) is a powerful parallel iterative method for solving system of sparse nonlinear equations and the method proved itself to be more robust than inexact Newton algorithms for many problems. ASPIN1 is nonlinearly scalable with respect to both the mesh size and the number of processors, however, it is not linearly scalable with respect to the number of processors. To improve the linear scalability a two-level version was introduced recently (ASPIN2).

In this talk, we present some new numerical results for solving some incompressible flow problems on very fine meshes using the two-level ASPIN algorithm. The focus of the discussion will be on the case of many subdomains.

Type of contribution: Talk

Location: Room 049, **Time:** Monday, 21 July, 11:20

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