TEMPLE UNIVERSITY
Department of Mathematics

Applied Mathematics and Scientific Computing Seminar

Room 617 Wachman Hall

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A hybrid domain decomposition method based on one-level FETI and BDDC algorithms

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Abstract.

With the goal of solving nonlinear contact problems, a 3-level domain decomposition is considered. Bodies in contact with each other are divided into subdomains, which in turn are divided into elements. Using an approach based on that of FETI algorithms does not lead to a scalable algorithm with respect to the number of subdomains in each body. A preconditioner based on a saddle point formulation is used which allows the use of inexact solvers and does lead to a scalable algorithm.