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DK Seminar

May 04, 2016, 14:15 - 15:45

University of Vienna,

Oskar-Morgenstern-Platz 1, WPI seminar room, 8th floor

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Additive Schwarz preconditioning for the hp -BEM: hypersingular integral equation on mixed meshes

We consider a discretization of the hypersingular integral operator for the Poisson problem in \mathbb{R}^3 using the hp -version of the Galerkin boundary element method on a mixed mesh consisting of triangles and quadrilaterals. We propose and analyze a preconditioner based on the overlapping additive Schwarz framework. The underlying decomposition consists of a global block of piecewise linears/bilinears and blocks of higher order polynomials supported on the vertex, edge and element patches. The resulting preconditioned system has a condition number that is uniformly bounded with respect to the mesh size h and the polynomial degree p .