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Lower Bounds for Overlapping and Nonoverlapping Domain Decomposition Preconditioners for Mortar Element Methods

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Abstract: We establish lower bounds for the condition numbers of two domain decomposition methods for elliptic problem discretized by geometrically nonconforming mortar finite elements:

- two-level overlapping additive Schwarz algorithms with unstructured coarse spaces; and
- iterative substructuring algorithms.

The lower bounds coincide, up to constants, with the upper bounds established elsewhere in the literature. The optimality of the condition number estimates is thus established.

Type of contribution: Talk

Location: Room 055, **Time:** Monday, 21 July, 11:00

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