A LOCALIZED VERSION OF MORTAR METHOD FOR TREATMENT OF NONMATCHING INTERFACES: ALGORITHM DESCRIPTION

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The present work presents an updated version of an earlier work on the method of localized Lagrange multipliers as applied to construct the interface constraint functional for treating non-matching interfaces[1]. In so doing, first we address the comments made by Puso[2] regarding the involved frame construction and the increased number of Lagrange multipliers. Second, we avoid the usage of special interpolation schemes for the end nodes or boundary nodes that are characteristic of the mortar method [3, 4]. Third, we have developed a straightforward way of specializing the updated localized non-matching algorithm to either a localized version of the mortar method or master-slave type mortar method. The resulting method preserves both linear and angular momentum, with a balanced treatment of the interface sides without the preference of master-slave or mortar-nonmortar sides. A companion presentation presents the details of implementation and numerical experiments [5]

REFERENCES


