



THE UNIVERSITY OF CHICAGO

COMPUTATIONAL AND APPLIED MATHEMATICS COLLOQUIUM

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Finite Element Methods for Interface Problems

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Jones 226, 5747 South Ellis Avenue

ABSTRACT

Since the seminal work of Peskin on the immersed boundary methods, there have been continuous efforts to find stable and high order methods for PDEs posed on domains with interfaces. As in the immersed boundary method, one main strategy is to have a fixed mesh and modify standard numerical methods to take care of the interface. We present some recent work in this direction. In particular, we discuss theoretical result for high contrast problems (e.g. the material constants highly vary). This is joint work with Erik Burman, Manuel Sanchez and Marcus Sarkis.

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