

Approximate the flux variable: a simplified mixed finite element method ¹

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Abstract

The mixed finite element method has been well-developed to compute the flux and pressure variables simultaneously, by using proper pair of finite element spaces requiring the inf-sup stability condition. Our attempt is to deviate from this classical approach by solving equations containing only the flux variable. We prove optimal order error estimates and provide numerical examples that conform the efficiency and convergence of our method.

¹This presentation is based on joint works with Imbumn Kim (Seoul), JeEun Ku (Oklahoma), and Young Ju Lee (Texas).