

ON THE STABILIZED MIXED DISCONTINUOUS FORMULATION FOR DARCY FLOW

Tomás P. Barrios^a and Rommel Bustinza^b

^a*Departamento de Matemática y Física Aplicadas, Universidad Católica de la Santísima Concepción,
Casilla 297, Concepción, Chile, tomas@ucsc.cl.*

^b*CF²MA, Departamento de Ingeniería Matemática, Universidad de Concepción, Casilla 160-C,
Concepción, Chile, rbustinz@ing-mat.udec.cl, <http://www.ing-mat.udec.cl/~rbustinz>*

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Abstract. In this talk, we provide *a priori* and *a posteriori* error analysis of an stabilized mixed discontinuous formulation for Darcy flow. The stabilized scheme is obtained through the introduction of suitable Galerkin least squares terms arising from constitutive and equilibrium equations. We use the well-known Lax-Milgram lemma to show the well posedness of the resulting discrete scheme and then, under suitable assumptions, we derive the corresponding *a priori* error estimates and its optimal rate of convergence. In addition, we present a reliable and efficient *a posteriori* error estimator. Finally, several numerical results illustrating the performance of the augmented scheme and associated adaptive algorithms are reported.