Instituto de Ingeniería Matemática y Computacional

PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE

ERROR ESTIMATES FOR OPTIMAL CONTROL PROBLEMS INVOLVING DIRAC MEASURE

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Abstract

We present how the theory of Muckenhoupt weights, Muckenhoupt-weighted Sobolev spaces, and the corresponding weighted norm inequalities can be used in the analysis and discretization of PDE-constrained optimization problems that involve Dirac measures. We focus the discussion on the so-called pointwise tracking optimal control problem for the Poisson problem and present a priori and aposteriori error estimates for standard finite element approximations.

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