

TÍTULO: Parameter identification in elliptic models: The problem of crack detection from electrical measurements

RESUMO: We investigate regularization methods for solving the problem of crack detection in bounded planar domains from electrical measurements on the boundary. Based on the level-set approach in [1] and on the regularization strategy in [2], we propose a Tikhonov method for stabilizing the inverse problem. Convergence and stability results for the Tikhonov method are proven. An iterative method of level-set type is derived from the optimality conditions for the Tikhonov functional, and a relation between this method and the iterated Tikhonov method is established.