Strong unique continuation at the boundary in linear elasticity and its connection with optimal stability in the determination of unknown boundaries

Edi Rosset
Università di Trieste
rossedi@units.it
Giovanni Alessandrini
Università di Trieste
alessang@units.it
Antonino Morassi
Università di Udine
antonino.morassi@uniud.it
Sergio Vessella
Università di Firenze
sergio.vessella@unifi.it

Abstract: Quantitative estimates of Strong Unique Continuation at the boundary for solutions to the isotropic Kirchhoff-Love plates subject to Dirichlet conditions, and for solutions to the Generalized plane stress problem subject to Neumann conditions are presented. These results have been applied to prove optimal stability estimates for the inverse problem of determining unknown boundaries.

References:

[1] G. Alessandrini, E. Rosset, S. Vessella, Optimal three spheres inequality at the boundary for the Kirchhoff-Love plate's equation with Dirichlet conditions, Arch. Rational Mech. Anal., 231 (2019), 1455–1486.

[2] A. Morassi, E. Rosset, S. Vessella, Optimal stability in the identification of a rigid inclusion in an isotropic Kirchhoff-Love plate, SIAM J. Math. Anal., 51 (2019), 731–747.

[3] A. Morassi, E. Rosset, S. Vessella, Optimal identification of a cavity in the Generalized Plane Stress problem in linear elasticity, J. Eur. Math. Soc., to appear.

[4] A. Morassi, E. Rosset, S. Vessella, Doubling Inequality at the Boundary for the Kirchhoff-Love Plate's Equation with Dirichlet Conditions, Le Matematiche, LXXV (2020), 27–55, Open access.