

A variational and numerical approach to model inverse problems applied in subduction earthquakes

Friday, August 16, 2024 9:30 AM (30 minutes)

This talk presents a mixed variational formulation for the problem of the elasticity equation with jump conditions in an interface with the purpose of modeling subduction earthquakes by introducing the concept of coseismic jump. For this new problem, we introduced an optimal control problem that seeks to recover the coseismic jump from boundary observations. Both problems can be discretized by applying mixed finite elements. Synthetic results applied to a realistic context will be presented.

Finally, we analyze some improvements for the numerical discretization and preliminary ideas of an inverse inequality that ensures the uniqueness and stability of the solution of the inverse problem.

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Session Classification: MS 07: Modeling, Analysis and Optimal Control of Infinite Dimensional Problems and Applications

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