

**Seminario de Análisis
Numérico
y Modelamiento
Matemático
SANMoMa -
Estudiantes
03-2026**



*An approach to the numerical
study of inverse problems
in elliptic PDEs*

Miércoles 06 de mayo, 12:30 -13:30 horas
Auditorio 'Profesor Hermann Alder Weller'

Abstract

Inverse problems use observational data from a physical system to obtain some unknown parameters of the system and, in this way, estimate its states. However, these problems are ill-posed: it is not possible to guarantee the uniqueness or stability of the solution in many of them. Some remarkable inverse problems are the medical image processing, the phenomenological study of earthquakes, and oil and mineral exploration.

This talk will present a motivational problem to discuss the mathematical tools for the analysis of optimal control problems in elliptic PDEs and their approximate solution using the finite element method. Some extensions to applied problems will also be presented.

Dr. Jorge Aguayo Araneda
Universidad de Concepción

Departamento de Ingeniería Matemática
Centro de Investigación en Ingeniería Matemática, CI²MA