Invited Speaker

Dr. Isaac Harris

Department of Mathematics
Purdue University

"Inverse Problems: Theory and Practice"

Thursday, November 9, 2023 • Smith Hall 154 • 4:00pm

Abstract

In this talk, we will discuss the concept of an inverse problem and its applications. In particular, we will focus on inverse problems arising from partial differential equations. These problems are to determine information about the mathematical model provided that one has measured values of the solution. The applications span the areas of medical imaging, non-destructive testing, cosmology, and geophysics. We will discuss how one can solve inverse shape problems using qualitative (i.e. non-iterative) methods. These methods require little a priori information and are computationally simple to implement when one collects enough data.