应用数学讲座

Научный Семинар по Прикладной Математике

Research Seminar on Applied Mathematics

应用数学报告（19）

报告人 / Докладчик / Speaker:
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题目 / Название / Title:
Optimization and Inverse Problems

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地点 / Место / Venue: Zoom ID：691 4115 6287   Password：210608

摘要 / Аннотация / Abstract:
Inverse problems arise in many applications in science and engineering. The term "inverse problem" is generally understood as the problem of finding a specific physical property, or properties, of the medium under investigation, using indirect measurements. In general, an inverse problem aims at recovering the unknown parameters of a physical system which produces the observations and/or measurements. Such problems are usually ill-posed. This is often solved via two approaches: a Bayesian approach which computes a posterior distribution of the models given prior knowledge and the regularized data fitting approach which chooses an optimal model by minimizing an objective taking into account both fitness to data and prior knowledge. Optimization plays an important role in solving many inverse problems. Indeed, the task of inversion often either involves or is fully cast as a solution of an optimization problem. In this talk, we discuss current state-of-the-art optimization methods widely used in inverse problems. We then survey recent related advances in addressing similar challenges in problems faced by the machine learning community and discuss their potential advantages for solving inverse problems.

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