数学与系统科学研究院

计算数学所定期学术报告

报告人：　王彦飞　研究员

（ 中国科学院地质与地球物理研究所 ）

报告题目：

Geophysical Data Regularization and Sparse Inversion Imaging

邀请人：　刘歆　博士

报告时间：2014 年 5 月 8 日（周四）

下午 16：00~17：00

报告地点：　科技综合楼三层 311

计算数学所报告厅

Abstract：

Using the observations to infer the unknowns (layer reflectivity, impedance, density, velocity, data completion, etc.) is called geophysical inversion. In this report, we focus on data completion problems.In seismic acquisition, because of the influence of obstacles at land surface, rivers, bad receivers,noise, acquisition aperture, restriction of topography and investment, the obtained data usually does notsatisfy the sampling theorem. A direct effect of the limitations of acquisition is the sub-sampled data willgenerate aliasing in the frequency domain; therefore, it may affect the subsequent processing such as filtering, de-noising, AVO (amplitude versus offset) analysis, multiple eliminating and migration imaging.In our recent work, we develop some sparse optimization methods for the wavefield reconstruction problem.We consider sparse Gaussian beams decomposition methods and solve the corresponding norm-constrained minimization problem by sparse optimization methods. Numerical tests for both synthetic and field data are performed for solving the ill-posed dataregularization problem and the related Gaussian beams migration.

报告人简介：

2002 年博士毕业于中国科学院数学与系统科学研究院计算数学所。主要从事科学、工程与资源环境中反问题的最优化、正则化理论、计算及应用研究。在线性与 非线性反演问题的理论及算法研究，及其在勘探及综合地球物理中的应用研究中做出了创新性的成果。发表学术论文 60 余篇，已出版中英文学术著作共 6 本。 International Journal on Geomathematics 等三种国际期刊编委。曾获国家杰出青年科学基金、中国青年科技奖、中国运筹学会青年科技奖、中国地球物理学会青年科技奖、中国科学院首届卢嘉锡青年人才奖等奖项。

欢迎大家参加！