

Inverse Problems Network Meeting 1

Monday, 24th April 2017 - Tuesday, 25th April 2017

WX/3.14, Queens Buildings, Cardiff University

Abstract of Talk

LARGE-SCALE INVERSE PROBLEMS IN SEISMOLOGY

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Detailed maps of subsurface rock properties can be estimated from seismic observations by solving a non-linear inverse problem. Applications of this technique include archeology, civil engineering, oil and gas exploration and earth-sciences. The inverse problem can be cast as a non-linear optimization problem that aims to fit observed to modeled data. To ensure a unique solution, regularization is required. Even when the solution is unique, it may be hard to find due to the non-linearity of the problem. In this talk I will give an overview of some recent developments that address these issues. These include advanced regularization for geometric inverse problems and constraint-relaxation to convexify the optimization problem.