# Determination of delta-shell and critically-singular potentials with local near-scattering data

Manuel Cañizares

BCAM, Bilbao, Spain.

## Abstract

We study the scattering problem with electric potentials. We consider potentials as a sum of *critically singular* and $\delta$-*shell* components, whose direct problem can be solved using a mixture of Neumann series and Fredholm theory. We obtain an uniqueness result with *near-field* partial data for the corresponding inverse problem, by means of a Runge approximation and an interior regularity results.