

Bilinear operators arising in inverse scattering for the acoustic wave equation

Allan Greenleaf (University of Rochester)

In high frequency linearized seismic imaging, singularities of an isotropic sound speed (encoding, for example, geologic features in the subsurface of the Earth) are determined from singularities of the data recorded from families of seismic experiments. Even under simplified assumptions (such as smooth background sound speed and no caustics) the correction terms to the linear approximation used in this approach are interesting operators microlocally, whose leading terms are bilinear Fourier integral operators. I will discuss some preliminary results. This is joint work with Raluca Felea, Romina Gaburro and Cliff Nolan.