High-frequency anisotopic elastic inversion

Niall Ryan
, University of Limerick

Abstract

We consider data from an ensemble of experiments which measure scattered mode-converted elastic waves. The resulting forward modelling operator maps singularities in the elastic Hooke's tensor and the density field into high-frequency scattered elastic waves. The number of experiments in the ensemble is arranged to match the number of independent components in the Hooke's tensor plus one, so that we have a formally determined problem. We show what information can be extracted (by way of an inversion algorithm) using quasi- P-P, P-SH, P-SV mode converted waves.