

Interferometric seismic imaging by sparse inversion

Seismic interferometry complements conventional imaging by using multidimensional cross-correlations of recorded wavefields. Unfortunately, its performance may be impacted by practicalities such as noise, limited aperture, and incomplete data. We address these issues by combining interferometric deconvolution with transform-domain sparsity promotion and imaging. This leads to a formulation that deals with data imperfections. Our preliminary findings show that sparsity promotion can lead to a significant improvement of the image quality under a salt flank.

Joost van der Neut
CITG, Delft University of Technology
j.r.vanderneut@tudelft.nl

Tristan van Leeuwen
Department of Earth and Ocean Science
University of British Columbia, Vancouver BC Canada
tleeuwen@eos.ubc.ca

Felix J Herrmann
Seismic Laboratory for Imaging and Modeling
The University of British Columbia
fherrmann@eos.ubc.ca

Kees Wapenaar
CITG, Delft University of Technology
c.p.a.wapenaar@tudelft