Geophysical Research Abstracts, Vol. 7, 09865, 2005
SRef-ID: 1607-7962/gra/EGU05-A-09865

Sensitivity analysis of an elastic dislocation model of the 1995 Antofagasta earthquake

M. Motagh, M. Baes, A. Abolghasem, J. Klotz and J. Zschau

GeoForschungsZentrum (GFZ) Potsdam, Potsdam, Germany

motagh@gfz-potsdam.de / Phone: +49 331-2881299

mbaes@gfz-potsdam.de / Phone: +49 331-2881113

abolghasem@gfz-potsdam.de / Phone: +49 331-2881182

Klotz@gfz-potsdam.de / Phone: +49 331-2881118

zschau@gfz-potsdam.de

The theory of elastic dislocation is commonly used to infer source parameters and sometimes the distribution of slip along the fault plane from the inversion of coseismic suface observations. To that end, inversions are often carried out assuming relatively simple models of a dislocation embedded in a homogenous, isotropic, elastic half-space. However, such assumptions poorly approximate subduction zone systems where a thin, dense oceanic plate and a relatively light, thick continental plate collide with each other. In this work we construct several models for the Mw=8.1, 1995 July 30 Antofagasta, Chile earthquake to identify the sensitivities of dislocation distributions to each of the above assumpions.