



Spatial pattern of the co-seismic landslides triggered by the M_w 7.9 Sichuan earthquake: Influence of the complex focal mechanism.

Patrick Meunier (1), Alexandra Robert (2), Marcello De Michele (3), Robert N. Parker (4), and Alexander L. Densmore (5)

(1) Ecole Normale Supérieure, Paris, France (meunier@geologie.ens.fr), (2) ICTJA, Barcelona, Spain (arobert@ictja.csic.es), (3) BRGM, Orléans, France (m.demichelle@brgm.fr), (4) Durham University, Durham, UK (R.N.Parker@durham.ac.uk), (5) Durham University, Durham, UK (A.L.Densmore@durham.ac.uk)

We have recently shown that density patterns of co-seismic landslides associated with large thrust earthquakes can be used to map the area of maximum slip of the fault plane (Meunier et al., 2013). In this study, we present the results of the inversion performed over the nearly sixty thousand landslides triggered by the Sichuan earthquake ($M_w=7.9$, 2008, China). This earthquake is particularly interesting because a) it is an order of magnitude larger than the cases we have previously studied and b) its focal mechanism is not pure thrust but exhibits a strong dextral component. Our source, inverted from the landslide data, clearly points at the two zones of pure thrust on the fault, independently identified by geodetic data (De Michelle et al., 2010). This result suggests that the co-seismic landslides were preferentially induced by the waves generated by the thrust component of the fault slip.