



Fast imaging of seismic rupture process of the recent earthquakes of the July 2005 - April 2006 period with $M_w > 6.8$

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The slip-patch method [Vallée and Bouchon, 2004] has been processed on the recent earthquakes of the July 2005 - April 2006 period. This method allows to quickly determine, from teleseismic P and SH body waves, the first and second order characteristics of the event (focal mechanism, depth, duration, and also more refined kinematic parameters, such as spatial slip distribution on the fault and rupture velocity in terms of slip patch(es)). Judging by the fit quality of most of the studied earthquakes for frequencies lower than 5-10 seconds, the slip-patch method appears to be very efficient for the three thrust, normal and strike-slip faulting, for shallow and intermediate-depth earthquakes (see examples). For these frequencies, the eventual observed complexities in the seismograms can often be well explained by a description of the source process with two main patches (see Mw7.5 Sandwich Earthquake, Mw7.7 New Ireland Earthquake and Mw6.8 Greek earthquake). Moreover, for the most damaging earthquakes, near-field synthetic signals corresponding to the obtained source patterns are calculated in order to estimate static displacement and the potential most damaged zones. For the Pakistan earthquake, the correlation between the calculated areas, radar vertical measurements and the observed most damaged zones allowed to validate the used source pattern. At the submission date, the studied earthquakes are the following :
2005 07 24 - Nicobar Islands, India Region - Magnitude 7.3

2005 08 16 - Near the East Coast of Honshu, Japan - Magnitude 7.2

2005 09 09 - New Ireland Region, Papua New Guinea - Magnitude 7.7

2005 09 26 - Northern Peru - Magnitude 7.5

2005 10 08 - Pakistan - Magnitude 7.6

2005 11 14 - Off the East Coast of Honshu, Japan - Magnitude 7.0

2005 12 05 - Lake Tanganyika Region, Congo-Tanzania - Magnitude 6.8

2005 12 11 - New Britain Region, Papua New Guinea - Magnitude 6.6

2005 01 02 - Sandwich Island Region - Magnitude 7.5

2005 01 08 - Southern Greece Region - Magnitude 6.8