Geophysical Research Abstracts, Vol. 7, 09675, 2005
SRef-ID: 1607-7962/gra/EGU05-A-09675

Rupture extent and duration of the Mw=9. Sumatra earthquake

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While duration and extent of seismic events are usually well known source parameters, the exceptional size of the 12/26/2004 Mw=9. Sumatra earthquake has made the identification of these first-order characteristics difficult. In fact, methods relying on the direct study of individual body waves (i.e. P, PP, S or SS teleseismic signals) cannot be directly used, because the source duration is longer than any time difference between the arrival of these waves. I show here that the use of an empirical Green function (Mw=7.2 earthquake on 11/02/2002) remains an efficient tool to determine this characteristics. Using a stabilized deconvolution between the two events, first results indicate a source duration of about 600s and a rupture extent of 1300-1400km. This rupture extent is very close to the one given by the aftershocks.