



Possible northward rupture propagation of the Sumatra-Andaman Earthquake to 18°N as suggested by new marine and geodetic data from South-Western Myanmar.

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A wide part of the Sunda trench is relatively well covered by geodetic and seismological datasets that build good constraints on the 26 December 2004 Mw=9.2 Sumatra-Andaman Earthquake coseismic rupture's parameters. North of 14°30'N, the lack of data yields a poorly constrained picture of the northern end of the coseismic rupture. There, bathymetric and sediment sounding surveys, revealed active normal faults within the subducting Indian plate. Furthermore, in the same area, seismic catalogues show that two clusters of normal faults were activated after the Sumatra Andaman Earthquake at various time intervals. Regarding the time-diffused characteristic of these seismic clusters and according to our Coulomb stress changes analyses, these normal faults could have been activated by postseismic relaxation following the main quake.

However, the stress changes induced by such postseismic relaxation are very small. We thus explored the possibility of an additional coseismic induced stress change. The latter hypothesis required the propagation of the rupture more north than previously stated. New geodetic measurements of displacements in South-Western Myanmar, at about 18°N, shows a westward motion towards the trench consistent with the northward propagation of the rupture up to this latitude. If confirmed, this finding suggests slow slip at the southern Myanmar trench after the Sumatra Andaman earthquake. We further question the rule of the 90°E ridge, present all along the margin there, on this northward rupture propagation.