Interplate coupling along segments of the Central America Subduction zone

Zoya Zarifi (1), Mohammad Raeesi (2), and Kuvvet Atakan (2)
(1) Statoil, Sandsli veien 90, Bergen, Norway, (2) Department of Earth Science, University of Bergen, Norway

We analyzed 5 major earthquakes that occurred during 1992 to 2012 in a segment of the Central America subduction zone along the coasts of Guatemala and El Salvador. These events include 1992/09/02 (Mw 7.7), 1993/09/10 (Mw 7.2), 2001/01/13 (Mw 7.7), 2012/08/27 (Mw 7.3) and 2012/11/07 (Mw 7.3). We derived the asperities of these earthquakes using two completely independent methods of body-waveform inversion and a gravity-derived measure, Trench Parallel Bouguer Anomaly (TPBA). Using TPBA we discuss the status of interplate coupling along the segment and interpret each of the major earthquakes as a piece of the governing rupture process. We delineate the critical unbroken asperities along the segment that will likely generate great earthquake(s) in the future.