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Seismogenic potential and tsunami threat of the strike-slip Carboneras fault in the western Mediterranean from physics-based earthquake simulations

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Table S1. Input parameters assigned to the fault sections modeled for the Eastern Betic Shear Zone (EBSZ). See Herrero-Barbero et al. (2021) for more detailed data about the criteria followed to assign the mean, maximum and minimum values according to references. R: rake; SR: slip rate.

Fault name	Fault section name	ID	Rake	Deviation	Slip rate	Deviation	References
Alhama de Murcia Fault (AMF)	Goñar–Lorca	AMF-1	20	0 - 40	1.10	0.50 - 1.70	R from slickenlines measured by Martinez-Diaz (1998). SR based on trenches (Ferrater et al., 2017; Ortuño et al., 2012)
	Lorca–Totana	AMF-2	39	19 - 59	0.90	0.80 - 1.00	R from 2011 Lorca eq.(Martinez-Diaz, Bejar-Pizarro, et al., 2012) and structural analysis by Alonso-Henar et al. (2020). SR from trenching and morphotectonic analysis (Ferrater et al., 2016, 2017)
	Totana–Alhama de Murcia	AMF-3	42	25 - 58	0.20	0.07 - 0.32	Data inferred from AMF-4
	Alhama de Murcia–Alcantarilla	AMF-4	42	25 - 58	0.20	0.07 - 0.32	SR and R from cross-section restorations (Herrero-Barbero et al., 2020). Min.SR from Silva et al. (2003).
Carboneras Fault (CF)	Southern Carboneras (offshore)	CF-1	10	0 - 20	1.20	1.10 - 1.30	Data from deflected submarine channels in CF-1 (Moreno, 2011) and onshore fluvial channels in CF-2 (Moreno et al., 2015). Max. SR based on GPS data of Echeverria et al. (2015)
	Northern Carboneras (offshore-onshore)	CF-2	10	0 - 20	1.20	1.10 - 1.30	
Palomares Fault (PF)	Southern Palomares–Arteal Faults	PF-1	-5 (0)	(-25) - 15	0.04	0.01 - 0.08	Data measured by Booth-Rea et al. (2004), comparing fluvial deposits and paleochannels in PF-1. R in PF-2 is consistent with the moment tensor of a recent M_W 3.6 event (IGN, 2019)
	Northern Palomares (S^a Almenara)	PF-2	15	0 - 35	0.04	0.01 - 0.08	
	Northern Palomares–Hinojar Faults	PF-3	15	0 - 35	0.10	0.04 - 0.16	R is inferred from PF-2 and SR is based on comparison between PF-3 and LTF-1
Los Tollos Fault (LTF)	Los Tollos Fault	LTF-1	15	0 - 35	0.16	0.06 - 0.25	R and SR obtained through trenching by Insua-Arevalo et al. (2015).
Carrascoy Fault (CAF)	SW Carrascoy–Algezares–Casas Nuevas	CAF-1	90	75 - 90	0.37	0.29 - 0.45	R and SR estimated from trenches by Martin-Banda et al. (2016). R is referred to the younger reverse branch.
	NE Carrascoy Fault	CAF-2	15	5 - 25	0.85	0.50 - 1.20	Data from structural analysis (Martin-Banda et al., 2021; Sanz de Galdeano et al., 1998; Silva, 1994).
Bajo Segura Fault (BSF)	Hurchillo	BSF-1	90	70 - 110	0.40	0.29 - 0.51(0.6)	SR estimations from Alfaro et al. (2012) using stratigraphic markers and assuming pure reverse. Note that GPS data from Borque et al. (2019) show 0.6 ± 0.2 mm/yr of shortening for the entire BSF zone
	Benejuzar	BSF-2	90	70 - 110	0.27	0.20 - 0.34	
	Guardamar	BSF-3	90	70 - 110	0.20	0.15 - 0.25	
	Bajo Segura Offshore	BSF-4	90	70 - 110	0.20	0.15 - 0.25	For R, see seismic profiles from Alfaro et al. (2012) and Perea et al. (2012). SR is inferred from BSF-4

Note: Rake is defined using the Aki and Richards (1980) convention (right-hand rule).If uncertainties cannot be quantifed, a default value of $\pm 20^\circ$ is used.

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