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Introduction

The World Stress Map (WSM) is a global compilation of information on the present day crustal stress field. It is a collaborative project between academia and industry that aims to characterize stress patterns and to understand the stress sources. It commenced in 1986 as a project of the International Lithosphere Program under the leadership of Mary-Lou Zoback. From 1995-2008 it was a project of the Heidelberg Academy of Sciences and Humanities headed first by Karl Fuchs and then by Friedemann Wenzel. Since 2009 the WSM is maintained at the GFZ German Research Centre for Geosciences and since 2012 the WSM is a member of the ICSU World Data System.

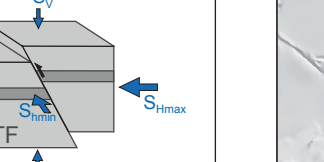
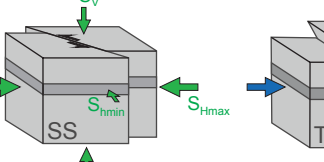
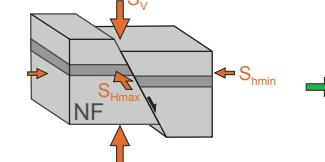
All stress information is analysed and compiled in a standardized format and quality-ranked for reliability and comparability on a global scale. The stress map displays A-C quality stress data records of the upper 40 km of the Earth's crust from the WSM database release 2016. Focal mechanism solutions labelled as possible plate boundary events in the database (for details see Heidbach et al., 2010) are not displayed. Further detailed information on the WSM quality ranking scheme, guidelines for the various stress indicators and software for stress map generation and the stress pattern analysis is available at www.world-stress-map.org.

Stress map displays the orientation of maximum horizontal compressional stress S_{Hmax}

Method	Quality	Stress Regime
 focal mechanism	A  S_{Hmax} is within $\pm 15^\circ$	 Normal faulting
 borehole breakouts	B  S_{Hmax} is within $\pm 20^\circ$	 Strike-slip faulting
 drill induced frac.	C  S_{Hmax} is within $\pm 25^\circ$	 Thrust faulting
 overcoring		 Unknown regime
 hydro. fractures		
 geol. indicators		

Data depth range

0-40 km



normal faulting regime $S_v > S_{Hmax} > S_{Hmin}$ strike-slip regime $S_{Hmax} > S_v > S_{Hmin}$ thrust faulting regime $S_{Hmax} > S_{Hmin} > S_v$

Citation of this map

Heidbach, O., Rajabi, M., Reiter, K., Ziegler, M. (2016): World Stress Map 2016, GFZ Data Service, doi:10.5880/WSM.2016.002.

Key references for the WSM project

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References of used data and software

This map contains of a number of datasets: Plate boundaries are from the global plate model PB2002 (Bird, 2003), topography and bathymetry from Smith and Sandwell (1997). Stress maps are produced with CASMI (Heidbach and Höhne, 2008) which is based on GMT from Wessel and Smith (1998).

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Major contributors to the WSM database release 2016

Australasian Stress Map Project, Geofon Catalogue, The Global CMT Cataloge, European-Mediterranean Regional CMT Solutions Cataloge, Ikon Science Adelaide, DGMK, NAGRA, NECSA, PETROM, BP, Schlumberger, CHEVRON-Texasco, FennoScandian Rock Stress Database, Wintershall, Shell, Karasu, PTT, Eni, RWE-Dea, WEG, Daleel Petroleum, Premier Oil

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