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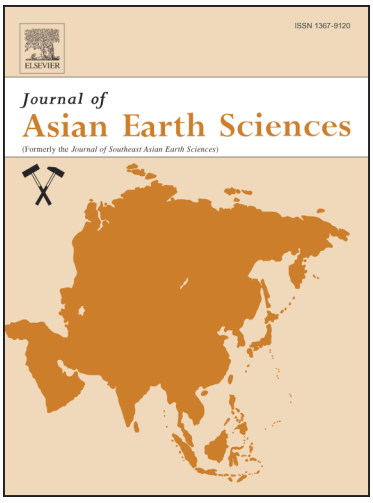

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Crustal Stress Pattern in China and Its Adjacent Areas

Xingping Hu[a,b,*], Arno Zang[c], Oliver Heidbach[c], Xiaofeng Cui[b], Furen Xie[b], Jiawei Chen[b]

a School of Earth and Space Science, University of Science and Technology of China, 230026 Hefei, China

b Key Laboratory of Crustal Dynamics, Institute of Crustal Dynamics, China Earthquake Administration, 100085 Beijing, China

c GFZ German Research Centre for Geosciences, Telegrafenberg, 14473 Potsdam, Germany

** Corresponding author. Xingping Hu. School of Earth and Space Science, University of Science and Technology of China, 230026 Hefei, China*

Telephone: +8601062846726, +8613811111002

E-mail address: huxp1987@163.com (Xingping Hu).

Abstract

During the update of the World Stress Map (WSM) database, we integrated the China stress database by strictly using the internationally developed quality ranking scheme for each individual stress data record. This effort resulted in a comprehensive and reliable dataset for the crustal stress of China and its adjacent areas with almost double the amount of data records from the WSM database release 2008, i.e., a total of 8,228 data records with reliable A-C qualities in the region of 45-155° East and 0-60° North. We use this dataset for an analysis of the stress pattern for the orientation of maximum compressive horizontal stress (S_{Hmax}). In contrast to earlier findings that suggested that the mean S_{Hmax} orientation would be aligned with the direction of plate motion, we clearly see from our results that the plate boundary forces, as well as topography and faulting, are important control factors for the overall stress pattern. Furthermore, the smoothing results indicate that the S_{Hmax} orientation in China rotates