

论文

西太平洋Benioff带的形态及其应力状态

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收稿日期 2003-4-17 修回日期 2003-12-28 网络版发布日期 接受日期

摘要 利用1970~1998年的地震资料,研究了西太平洋Wadati Benioff带形态,发现各区域Wadati Benioff带的倾角与板块俯冲速度有关,俯冲速度越大,倾角越小;利用1976~2002年哈佛大学的震源机制资料,对各区域地震断层类型进行了统计,结果表明:地震断层类型也与俯冲速度有关,俯冲速度大的地区逆断层数量高达74条以上,俯冲速度小的地区正断层数量上升到45条左右;本文还探讨了西太平洋板块水平向运移的主动力方向,认为该方向为283°.

关键词 [西太平洋俯冲带](#) [Wadati Benioff带](#) [震源机制解](#) [板块运动](#)

分类号

DOI:

Characteristics of the subduction zone in the western Pacific and its stress state

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Received 2003-4-17 Revised 2003-12-28 Online Accepted

Abstract The distribution of earthquakes in the western Pacific is studied using the hypocenters determined by ISC. from 1970 to 1998. The result shows that the dip angles of the Benioff zone are correlated with velocity of the plate movement in different regions. The dip angles become smaller when the speed becomes larger. Focal mechanisms of events $M_b \geq 5.0$ from 1976 to 2002 are analyzed using the data from Harvard university. It shows that types of faults are related with velocity of plate motion. In the area of higher velocity of plate motion, the number of thrust faults is more than 74 of the total. In the area of smaller one, the proportion of normal faults raises up to about 45%. The western Pacific horizontal movement dominants force direction, which is 283°.

Key words [Subduction zone in the western Pacific;Wadati Benioff zone;Focal mechanism solution;Platemotion.](#)

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