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## 台湾—吕宋会聚带的地壳运动特征及其动力学机制

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Crustal movement and its dynamic mechanism of the Taiwan-Luzon convergent zone

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摘要

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**摘要** 南海东部的台湾—吕宋会聚带是南海四个边界中构造背景最为复杂、构造活动最为活跃。本文收集该区的GPS速度场资料,通过对速度场进行样条插值获得了该区连续的速度场、主应变率场、最大剪应变率场等结果。研究发现,该区的地壳运动受西北侧华南陆缘基底隆起和西南侧巴拉望岛阻挡、台湾北部24° N俯冲极转换、琉球海沟弧后扩张,以及菲律宾大断裂高速走滑等关键构造因素的影响,可分为(1)受华南地块运动影响区;(2)台湾岛上俯冲极转换部位至宜兰盆地之间受弧后扩张影响区;(3)俯冲极转换部位以南受菲律宾海板块俯冲和北港隆起阻挡影响区;(4)吕宋岛菲律宾大断裂以东受菲律宾海板块运动影响区;(5)大断裂以西受菲律宾海板块运动和巴拉望阻挡影响区;(6)巴拉望受巽他地块运动影响区6个地壳运动与变形区。

**关键词:** 台湾—吕宋会聚带 现时地壳运动 应力场 应变率 GPS

**Abstract:** The Taiwan-Luzon convergent zone is the most tectonically-complicated and active in the four boundaries of South China Sea. This paper collected the GPS velocity fields of this area, and gained continuous velocity field, strain rate tensor and maximum shear strain rate by interpolation to the combined velocity field. With these results, it is suggested that the crustal movement of Taiwan-Luzon convergent zone is controlled by impediment of basement high of the continental margin to the northwest and that of Palawan to the southwest, the transformation of subduction polar near 24° N in east Taiwan Island, the back-arc spreading of the Ryukyu trench, and the high-speed left-lateral slip of the Philippine fault (PF). As a result, the Taiwan-Luzon convergent zone was divided into six parts of different crustal movement and deformation: (1)the area controlled by south China block, (2)the area between Ilan basin and transformation point of subduction polar influenced by back-arc spreading in northern Taiwan, (3)the area of south of the transformation point of subduction polar influenced by both high-speed subduction of Philippine Sea(PhS) plate and impediment of Beikang high, (4)the area east of PF influenced by PhS plate, (5)the area west of PF influenced by both PhS plate and Palawan impediment, and (6)the Palawan area controlled by the Sundaland block.

**Keywords:** Taiwan-Luzon convergent zone Crustal movement Stress field Strain rate GPS

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