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The Role of the High Magnetic Anomaly Belt along the Eurasian Continental Shelf Edge off Eastern China in the Taiwan Orogeny

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Situated on the Eurasian continental shelf edge off eastern China, the island of Taiwan is special in orogeny. It is the transition zone between two subduction systems: the southwestward-extending Ryukyu subduction system in the northeast and the westward-migrating Manila subduction system in the south. It behaves as a wave (referred to as the Taiwan Solitary Tectonic Wave) traveling southwestward. On the continental shelf edge to the southwest of Taiwan, there exists a high magnetic anomaly belt, which extends to the Puli basin, the center of Taiwan. Near the northeastern end of this high magnetic anomaly belt, a high basement area (referred to as the Peikang Basement High) exists in the Western Coastal Plain and the offshore area. Some concentric morphological features and upthrust-fault pattern of velocity structure derived by the tomographic method around the Peikang Basement High show that the high magnetic anomaly belt plays an important role in the Taiwan orogeny. This paper discusses the behavior of the Taiwan island in its orogeny and its relationship with the high magnetic anomaly belt, based on morphological, magnetic and seismological data.