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Gravity anomaly and tectonics of Chile Triple Junction

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The Chile Triple Junction (CTJ), an RTT-type triple junction located at 46 30'S off the western coast of Chile, is to be remarked in that the Chile Ridge, one of the typical mid-oceanic ridges that generate oceanic plates, is subducting underneath the South American continental plate. It is well known that earthquakes occur frequently off the Chilean coast. But earthquakes never occur on and around the CTJ and the fracture zones nearby (F.J. Tilmann et al.2008). A thick oceanic crust usually develops below the ridge crest. Even though the ridge reaches the trench, the ridge never subducts due to the thick crust supported by the buoyancy of the mantle materials. Or the subduction of the ridge may be delayed as compared with the case of the neighbouring sea floor. The purpose of this study is to solve the problem of the ridge subduction mechanism and the regional tectonics around the CTJ mainly based on the marine geophysical data collected by the recent MR08-06 cruise by R/V MIRAI.

Keywords: Chile Ridge, Triple junction, Nazca Plate, Antarctic Plate