

飛騨地方に発達する中新世岩脈群の古地磁気と回転運動

杉崎 雄一 [1]; # 星 博幸 [2]
[1] 愛知県立熱田高; [2] 愛知教育大・理科・地学

Paleomagnetism and tectonic rotation of Miocene dikes in the Hida region, central Japan

Yuichi Sugisaki[1]; # Hiroyuki Hoshi[2]
[1] Aichi Pref. Atsuta Senior High School; [2] Dept Earth Sci., Aichi Univ. Education

<http://hoshi.a.la9.jp/index.htm>

Central Honshu of Japan is an ideal field for the study of crustal deformation related to arc-arc collision. In this study we obtained rock magnetic and paleomagnetic results from early Miocene igneous rocks in central Honshu in order to examine rotational deformation caused by the collision of the Izu-Bonin-Mariana (IBM) arc with central Honshu. In Takane of the Hida region, gabbro intrusions and older sedimentary rocks are intruded by numerous andesitic dikes that comprise a parallel dike swarm. More than 240 oriented cores were taken at 38 sites in two localities for magnetic study. The andesites and gabbros generally have magnetite, and some andesites also contain pyrrhotite. The magnetite records easterly deflected remanent magnetization directions of dual polarities that pass the reversals test. Positive baked contact tests at two sites demonstrate that the easterly deflected direction is a thermoremanent magnetization acquired at the time of intrusion. The overall in situ (i.e., in geographic coordinates) mean direction for andesitic dikes is judged to be highly reliable, although there are two possible scenarios for explaining the easterly deflection: (1) clockwise rotation and (2) tilting to the northwest. We prefer the former scenario and conclude that ~45 deg clockwise rotation occurred in Takane with respect to the North China Block of the Asian continent. This rotation must represent the clockwise rotation of entire Southwest Japan during the opening period of the Japan Sea. Very little difference is observed between the amount of the easterly deflection in Takane and those in the Tokai and Hokuriku regions, indicating no significant relative rotation. Thus, the crust beneath Takane has not suffered rotation caused by collision of the IBM arc with Honshu.