南極、セール・ロンダーネ山地における 鮮新世以降の氷床変動とグレイシャルアイソスタシーによる山地隆起

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Glacial melting and uplift estimations around the Sør-Rondane Mountains of the East Antarctica since the Pliocene

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The role of the Antarctic ice sheet for several global climatic events such as Mid-Pleistocene Transition and Mid-Brunhes Event during the Quaternary era is great issue for elucidating the global systems（Pillans *et al*., 2004; Pollard *et al.*, 2009; Liu et al., 2010）. A large part of the S*φ*r-Rondane Mountains has been covered by the East Antarctic ice-sheet. The minimum surface exposure ages using the cosmogenic isotopes 10Be and 27Al indicate a significant shrinkage of the ice sheet thickness around the S*φ*r-Rondane Mountains likely before the Middle Pleistocene（Moriwaki *et al.,* 1992）. On the basis of such glacial history, we estimate the amount of glacial melting and the upheaval of mountain since the Pliocene in the following procedures. Firstly, the following six simple ice disk models were assumed: (1) The no fall of the ice surface altitude of the 600 m ice thickness, and 50 km retreat of the ice cliff, (2) The no fall of the ice surface altitude of the 600 m ice thickness, and 200 km retreat of the ice cliff, (3) All 600 m upheaval by the glacial isostasy, and 50 km retreat of the ice cliff, (4) All 600 m upheaval by the glacial isostasy, and 200 km retreat of the ice cliff, (5) The 660 m fall of the ice surface altitude of the 1800 m ice thickness, and 50 km retreat of the ice cliff, (6) The 480 m fall of the ice surface altitude of the 1800 m ice thickness, and 200 km retreat of the ice cliff. Secondly, we verify the reality of each model using the ice volume and sea-level change on the basis of the marine oxygen isotopic ratio (Lisiecki and Raymo, 2005) since the Pliocene. As a result, the ice disk model (1), (2), (5) and (6) have the reliability for the constraints. Then the model (1) brings about a 1.1 m sea-level rise, the model (2) brings about a 26 m sea-level rise, the model (5) brings about a 4.3 m sea-level rise, the model (6) brings about a 26 m sea-level rise, respectively. The glacial isostasy accompanying reduction of these ice disk models brings about 50 to 400 m upheaval at the disk edge region, and 0 to 160 m upheaval at the inland region.

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