

VERTICAL PROFILES OF ICE SHEET MEASURED WITH A MOBILE
RADIO ECHO SOUNDER IN EAST QUEEN MAUD LAND, ANTARCTICA
(ABSTRACT)

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The vertical profiles of the ice sheet over a wide area around Dome Fuji Station and along a route of about 1000 km from Dome Fuji Station (77°22'S, 39°36'E, 3807 m a.s.l.) to S16 (69°01'S, 40°03'E, 591 m a.s.l.) were surveyed by a 179-MHz radio echo sounder with a continuous recording system. The survey was part of the Dome Fuji Project which started in the 33rd Japanese Antarctic Research Expedition (November 1991–March 1993). Reflected radio echoes from internal layers shallower than 2000 m were successfully detected. Echoes from the bedrock, which represent the basal topography, were also measured even at places where the ice sheet on it was thicker than 3500 m. The vertical profiles of radio echoes along the route indicate the regional characteristics of the internal layers. In the Dome Fuji Station area, the internal layers were stratified horizontally, indicating that the horizontal flow of ice is very slow there. On the other hand, the internal layers indicated in the vertical cross section near the coast appeared rather complicated, probably because of the large and non-uniform ice flow.

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