

DYNAMICAL BEHAVIOR OF SHIRASE GLACIER IN RELATION  
TO DETERIORATION OF THE SHELF ICE (ABSTRACT)

Masayoshi NAKAWO<sup>1</sup> and Shin'ichi KAWAI<sup>2</sup>

<sup>1</sup>*Institute for Hydrospheric-Atmospheric Sciences, Nagoya University,  
Furo-cho, Chikusa-ku, Nagoya 464-01*

<sup>2</sup>*National Research Institute for Earth Science and Disaster Prevention,  
3-1, Tennodai, Tsukuba 305*

Recent thinning of the Antarctic ice sheet has been found at the middle stream of the Shirase drainage basin, East Antarctica, through intermittent surveys in the last 20 years. The strain rate of the ice sheet, obtained in the observations, was about  $+10 \times 10^{-5}/a$  and  $-3 \times 10^{-5}/a$  along the longitudinal and vertical directions, respectively, near Mizuho Station in the middle stream of Shirase Basin. The strain rates for the last 9000 years, on the other hand, were found to be about  $+14 \times 10^{-5}/a$  and  $-7 \times 10^{-5}/a$  respectively, based upon analyses on an ice core retrieved at Mizuho Station. A steady state model calculation gave values for the strain rate intermediate between the survey data and the core data. These results have been explained, by a two dimensional non-steady state model, in terms of deterioration of the ice shelf at the exit of Shirase Basin, which could have taken place roughly 2000 years before the present.

*(Received December 3, 1993)*