西 Dronning Maud Land、Fimbul Ice Shelf に点在する 3 つのアイスライズの近年の質量収支

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Recent mass balance of three ice rises in the vicinity of Fimbul Ice Shelf, Western Dronning Maud Land

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Growing field and modeling evidence indicate that Antarctic ice rises, grounded features surrounded by ice shelves, have played key roles in evolution and dynamics of the Antarctic Ice Sheet. Post-LGM deglaciation in Ross Sea was largely controlled by the ice rise at the Roosevelt Island. Distinct stability of the Larsen C Ice Shelf in the Antarctic Peninsula, comparing to neighboring Larsen A and B, has been presumably caused by two small ice rises near its terminus. Recent rapid retreat of Pine Island and Thwaites Glaciers was perhaps initiated by un-grounding of a pinning point just in front of their grounding line. Similar impacts of ice rises are expected in Dronning Mauld Land (DML), where adjacent ice shelves are usually (half-)connected and thus probably dynamically coupled. Nevertheless, these ice rises are poorly known. Norwegian Antarctic Research Expeditions have investigated three ice rises in the vicinity of Fimbul Ice Shelf, western DML. These ice rises are within ~200 km from each other, but have distinct glaciological settings around them. We are investigating their recent mass balance using input-output methods, and longer-term evolution using ice-flow models. In this presentation, we show several estimates of the recent mass balance, and examine their uncertainties.

西 Dronning Maud Land に位置する Fimbul Ice Shelf には、3 つの主なアイスライズが存在する。これらのアイスライズの現地調査から、近年の質量収支と数千年規模での変動の解明に取り組んでいる。本講演では、近年の質量収支およびその精度について議論する。