Detailed rediogenic Sr isotope data from the lower Maieberg Formation, cap carbonate to the Ghaub glaciation in Namibia

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Strong positive-to-negative carbon isotope excursions in the Neoproterozoic depositional sequences to values of -5 permil are associated with several glaciations. For interpreting the carbon isotope variations in Neoproterozoic seawater, it has been turned to understand the Neoproterozoic global carbon cycle with focus on global refrigeration events particularly. The remarkable carbon isotope anomary are obtained in worldwide carbonates across the glaciations and primary isotopic records of Neoproterozoic seawater are well-preserved in least altered carbonate sequences. During the global ice age, the 87Sr/86Sr ratio of deep ocean water could decline due to hydrothermal exchange at mid-ocean ridges and absence of continental flux. However, in fact, radiogenic Sr isotope anomaly is not observed in carbonates across Neoproterozoic global glaciations. The resolution of Sr isotope data in the carbonates has great importance to examine the geochemical cycles that control the ocean system during the Neoproterozoic global refrigeration events.

Strong positive-to-negative carbon isotope excursion is obtained in Neoproterozoic carbonates across the glaciations of the Otavi Group, northwest Namibia and the isotopic records are well-preserved in least altered carbonate sequences. We present closely-spaced 87Sr/86Sr data from the lower Maieberg formation, cap carbonate to the Ghaub glatiation of the Otavi Group. The cap carbonates, Maieberg formation, following the glaciation has 280 m thick at the sampling point. The carbonate samples are collected from the basal 11m thick at intervals of one meter on the glacial surface on the platform using an engine cutter during the field work in 2001 and 2002. We discuss the snowball event and the consequent geochemical cycles based on high-resolution radiogenic Sr isotope data in the cap carbonates.