

## Modern silicoflagellate assemblages as indicators of the primary hydrological zonal systems of the Southern Ocean

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Silicoflagellates are a small group of unicellular phytoflagellates that resemble some Haptophyta. During one phase of their life-cycle, silicoflagellates form a siliceous skeleton that is composed of a network of tubular and hollow elements made of biogenic silica that are connected by triple junctions. Silicoflagellates are widespread in present-day oceans, and are particularly abundant in coastal regions and areas under the influence of river discharge, where siliceous phytoplankton often dominate the phytoplankton communities. In the Southern Ocean, silicoflagellates are a common component of living phytoplankton communities, and have a widespread presence in silica-rich sediments. Due to their sensitivity to changes in sea-surface temperature, silicoflagellate skeletons have been used as biotic proxies for palaeotemperature. Recent research, using sediment traps deployed along a transect in the Australian sector of the Southern Ocean, has suggested that the position of the Subantarctic Front could be traced using an index that is based on the proportions of two different species of the genus *Dictyocha*. Here, we provide new silicoflagellate flux data from a sediment trap that was deployed in the subantarctic waters southeast of New Zealand to assess the applicability of this index to the New Zealand sector of the Southern Ocean.