

## Coccolithophore and silicoflagellate assemblages in the East China Sea and Japan Sea

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Satellite imagery can provide regional and seasonal distribution patterns of living phytoplankton by the remote sensing of chlorophyll-*a* concentrations, while surface-water physicochemical parameters (e.g. temperature, salinity, nutrients and light) often determine their horizontal and vertical distributions. However, species-specific details of these assemblages still require in-situ collection and shipboard/land-based analyses. Nowadays, the average sea-surface temperature (SST) is increasing, and phytoplankton distributions are migrating. Therefore, this study focuses on: 1) absolute phytoplankton abundances (notably of coccolithophores and silicoflagellates) along a transect from Nagasaki to Tsuruga or Toyama Bays, central Japan via the East China Sea and the Tsushima Strait (southwestern Kyushu) during the May, August and October 2018 cruises of the T/S *Nagasaki-Maru* of Nagasaki University; and 2) their relationship to records of SST, salinity and chlorophyll-*a* obtained by the ship's recorder.

The species assemblages identified in the summer of 2018 in the East China Sea and the central/coastal area of the Japan Sea are nearly identical. There are three common coccolithophores (*Emiliania huxleyi*, *Gephyrocapsa oceanica* and *Umbilicosphaera sibogae*) and three common silicoflagellates (*Dictyocha stapedia*, which is often misidentified as the fossil species *D. fibula*, *D. cf. D. subclinata* and *Octactis pulchra*). The main diatom contributors include the genera *Chaetoceros*, *Guinardia*, *Rhizosolenia*, *Bacteriastrum* and *Cocconeis*. Our results show that: 1) geographic boundaries of phytoplankton assemblages could be recognised in the Kanmon Strait (northern Kyushu), the northeastern area of Oki Islands and the Noto Peninsula; 2) the SST in the Japan Sea is steadily increasing, with similar assemblages seen in the East China Sea and Japan Sea in summer 2018; and 3) the symbiotic relationship between *Reticulofenestra sessilis* and *Thalassiosira* sp., normally found in offshore deep-photoc waters, was observed in the coastal area of Tsuruga or Toyama Bays of northern central Japan.