Japan Geoscience Union Meeting 2013
(May 19-24 2013 at Makuhari, Chiba, Japan)

ACG38-01 会場:101A 時間:5 月 21 日 09:00-09:15

2010 年 10 月～2012 年 9 月ノースウィンド深海平原における珪質植物プランクトンの沈降フラックス
Sinking fluxes of siliceous phytoplankton in the Northwind Abyssal Plain, Oct. 2010-Sep. 2012

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Time-series sinking fluxes of siliceous phytoplankton (diatom, silicoflagellate, chrysophyte cyst, endoskeletal dinoflagellate Actiniscus, and edridian) were studied at Station NAPt in seasonal sea-ice area of the Northwind Abyssal Plain (75N 162W, 1975m water depth) from 4 Oct. 2010 through 18 Sep. 2012. Total of 51 sediment trap samples obtained at 180m water depth were applied in this study. Sinking flux of total mass (mainly composed of lithogenic materials) was relatively high in Nov.-Dec. 2010, July-Aug. 2011, and Nov.-Dec. 2011. However, total mass and siliceous phytoplankton fluxes in summer 2012 were relatively low compared to those in 2011. High diatom flux was observed in early winter (Nov.-Dec.) and Aug.-Sep. 2011. The diatom sinking flora except for Aug.-Sep. 2011 was mainly composed of *Chaetoceros* spp., their resting spores, and *Thalassionema nitzschioides*. This flora is similar to the diatom assemblage in the Canada Basin. The diatom sinking flora in Aug.-Sep. 2011 was mainly composed of *Fossula arctica* and *Fragilariopsis oceanica*. In this period, abundant gelatinous house of Appendicularia was also contained in the samples. The high abundances of *Fossula*, *Fragilariopsis*, and Appendicularia were not observed in summer 2012. Silicoflagellate flux showed maxima in early winter and summer both 2011 and 2012. Based on the comparison of diatom sinking flora around the study area, the absence of diatom flux peak in summer 2012 is probably due to significant influence of Beaufort Gyre waters rather than shelf waters. Chrysophyte cysts and heterotrophic siliceous dinoflagellate genus *Actiniscus* were observed throughout the sampled duration. The sinking flux of ebridian *Ebria tripartita*, which is mainly observed in the outer continental shelf of Chukchi Sea, increased in Nov. 2010. The high biogenic flux in early winter did not reflect the high primary production at Station NAPt due to limited light condition in polar night. The large portion of high total mass flux in every early winter is probably explained by lateral particle transportation into the Northwind Abyssal Plain from the Chukchi Sea shelf.

キーワード: 珪藻, 植物プランクトン, 沈降粒子フラックス, セディメントトラップ, ノースウィンド深海平原, 北極海
Keywords: diatom, phytoplankton, sinking particle flux, sediment trap, the Northwind Abyssal Plain, the Arctic Ocean