Changes in alkenones flux recorded on the eastern continental shelf of the Bering Sea

Naomi Harada[1]; Yusuke Okazaki[2]; Kota Katsuki[3]; Kazumasa Oguri[4]; Osamu Tadai[5]; Susumu Konno[6]; Richard W. Jordan[7]; Kyung-Hoon Shin[8]; Hisashi Narita[9]

[1] JAMSTEC, IORGC; [2] IORGC, JAMSTEC; [3] PNU; [4] IFREE, JAMSTEC; [5] MWJ; [6] Interactive Symbiosphere Sciences, Yamagata Univ.; [7] Dept. of Earth & Environmental Sci., Yamagata Univ.; [8] Dept. of Environ. Mrine Sci., Hanyang Univ.; [9] Div. Oceanogr., Tokai Univ.

Flourishes of coccolithophores can be detected by ocean color imagery with data from the satellite-borne Sea-viewing Wide Field-of-view sensor SeaWiFs that was launched in 1997. Thus, temporally and satially large-scale blooms of *Emiliania huxleyi* (*E.huxleyi*) have been distinguished annually in the eastern continental shelf of the Bering Sea since 1997. In 1997, a combination of atmospheric mechanisms produced summer weather anomalies such as calm winds, clear skies, and warm air temperature over the Bering Sea and the weather anomalies caused depletion of the subpycnocline nutrient reservoir (Napp and Hunt, 2001). After depletion of nitrate and silicate, a sustained (more than 4-month-long) bloom of *E.huxleyi* was observed (Stockwell et al., 2001). Because of the speed and mabnitude with which parts of the Bering Sea ecosystem resonded to changes in atmospheric factors (Napp and Hunt, 2001) and because a bloom of the coccolithophorid, *Coccolithus pelagicus* has also been detected in the northeastern Atlantic Ocean off Iceland every year since 1997 (Ostermann, 2001), the appearance of an *E.huxleyi* bloom in the Bering Sea could be related to atmospherically forced decadal oscillations or global factors. We have investigated spatial expansion and temporal development of *E.huxleyi* bloom on the continental shelf in the Bering Sea by using a biomarker of *E.huxleyi*, C_{37} alkenones flux recorded in the sediments during the past 100 years. As a result, the *E.huxleyi* bloom had been prominent since 1970's at latest during the last 100 years. In this presentation, we will show the relationship between *E.huxleyi* bloom and activity of Alutian low, and also changes in diatom assemblages.