

## Nutrient and phytoplankton dynamics in the continental slope region of the East China Sea associated with the Kuroshio frontal eddy

\*Naoki Yoshie<sup>1</sup>, Anri Kabe<sup>1</sup>, Kazuki Ohgi<sup>1</sup>, Eisuke Tsutsumi<sup>2</sup>, Shigenobu Takeda<sup>3</sup>, Joji Ishizaka<sup>4</sup>, Xinyu Guo<sup>1</sup>

1. Center for Marine Environmental Studies, Ehime University, 2. Research Institute for Applied Mechanics, Kyushu University, 3. Faculty of Fisheries, Nagasaki University, 4. Institute for Space-Earth Environmental Research, Nagoya University

The lower-trophic level ecosystem in the continental slope region of the East China Sea (ECS) during summer generally shows typical subtropical features, i.e., small size pico-phytoplankton such as cyanobacteria dominates in the euphotic layer under the oligotrophic condition due to the stable stratification. It is also known that such stable physical and chemical conditions are often disturbed by the Kuroshio frontal eddy. In this study, we investigated the phytoplankton dynamics associated with the passing of Kuroshio frontal eddies. We conducted comprehensive observations with the high horizontal resolution (7km) around the continental slope region in the ECS in the late-July, 2018. We observed drastic changes in the depth of subsurface chlorophyll maximum (SCM) and nitrate concentrations around the SCM, and micro-phytoplankton such as diatom mainly changed around SCM. We found cyclonic frontal eddies with 15-35 km diameter around the 40-80 m depth near the drastic change of the SCM. These changes were caused by the horizontal advection of nutrient-rich shelf water associated with the passing of the cyclonic frontal eddies.

Keywords: frontal eddy, nutrient, phytoplankton, East China Sea