Surface productivity and potential terrestrial ecology system in the central Okhotsk Sea during the middle-early Pleistocene

*Li Lo[1], Lukas Smik[2], Simon T. Belt[2]

1. Department of Geosciences, National Taiwan University, 2. School of Geography, Earth and Environmental Sciences, University of Plymouth

Here we present the first multi sterol biomarkers results from the central Okhotsk Sea using Site MD01-2414 (53°11.77’ N, 149°34.80’ E, water depth 1123 m) during the past 1.2-1.5 million years ago (Ma). We measured brassicalsterol, campesterol, and beta-sitosterol. Results show that the brassicalsterol, campesterol and beta-sitosterol varied from 0-1200, 0-12 and 10-40 ng g^{-1} dried sediment, respectively. The brassicalsterol shows both significant 23- and 41-kyr cycles, where the campesterol and beta-sitosterol show only precession cycle. This is the first report of sterols variations in the central Okhosk Sea during the 41-kyr world. Brassicalsterol variations may be mixed with surface productivity changes and terrestrial organic matter input, meanwhile the potential use of campesterol and beta-sitosterol as regional terrestrial plant biota changes may need further geographical verification in the future.

Keywords: Okhotsk Sea, Pleistocene, Surface productivity, Terrestrial biota

