Antarctic vegetation and climate dynamics during the Eocene: new data from the Wilkes Land margin

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During IODP Expedition 318 (January–March 2010, Wellington to Hobart), ~2000 m of Eocene to Quaternary sediments were recovered from the Antarctic (Wilkes Land) margin, documenting the evolution of this margin from an ice-free “greenhouse Antarctica” to the present-day icehouse environment. Based on a bio- and magnetostratigraphically dated, late early to early middle Eocene record recovered at Site U1356, we have carried out palynological and organic geochemical analyses in order to gain insights into the terrestrial environmental dynamics on Antarctica under peak greenhouse conditions.

Our preliminary palynological indicate that the vegetation along the Wilkes Land margin was highly diverse and contains thermophilous elements that today are widely distributed in the subtropics; along with our organic geochemical results, their presence suggests warm conditions at least in the coastal lowlands of the Wilkes Land margin. At the same time, taxa that today are typical for cool temperate settings are consistently present.