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## Reconstruction of paleoenvironment in the Pacific Ocean during the mid-Cretaceous Oceanic Anoxic Event 2

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The presence of negative carbon isotope excursions at the base of some Oceanic Anoxic events and PETM are explained to have been associated with massive inputs of mantle-derived volcanic CO<sub>2</sub> or the dissolution of methane hydrates. In particular, prominent negative carbon isotope excursions have been found at the base of the Toarcian OAE and OAE 1a. In the OAE2, however, negative carbon isotope excursions have not been always observed close to the base of the OAE2 at the several studied areas. A negative carbon isotope excursion below the 1st build-up phase is explained by a diagenetic signal, or a reflection of local oceanographic episodic events, such as fresh water input.

We identified a negative carbon isotope excursion just below the 1st build-up phase from two distant sections of the Pacific regions. In Hokkaido (North Japan), the negative excursion is recognized immediately below the OAE2 horizon in Upper Cretaceous Yezo Group sediments from the Shumarinai to Hakkin sections of central-northwestern Hokkaido. This evidence suggests the occurrence of a negative shift in the carbon isotope composition of global atmosphere and/or the change in global terrestrial climate and hydrological cycles immediately before the onset of the OAE2. The negative shift began 23?51 ky before the onset of the 1st build-up phase of the OAE2, which is generally consistent with the onset of the volcanic pulse manifested by the negative 187Os/188Os shift and increased pCO<sub>2</sub> levels. The negative  $\delta^{13}C_{wood}$  excursion is also recognized in the Buddy Canyon Formation of the Cretaceous Great Valley Group exposed in the California, USA. The negative spike identified in the two sections of NW and NE Pacific Ocean may reflect massive input of volcanic CO<sub>2</sub> immediately before the onset of the OAE 2.

Keywords: Pacific Ocean, Oceanic Anoxic Event 2, Cretaceous, carbon isotope