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Sr,Nd 同位体比を用いた琵琶湖古環境復元
Paleoenvironment reconstruction from Sr,Nd isotopic ratio, Lake Biwa

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Climate changes during last Pleistocene to Holocene are characterized by Glacial-Interglacial Cycle, or more shortly, Dansgaard-Oeschger Cycle, and so on(Dansgaard et al., 1993). To reconstruct these millennial scale climate change, it is necessary to analyze high resolution geological records.

Lake sediment is one of geological records that can be analyzed high resolution because of their high accumulation rates. Thus, we can reconstruct paleoenvironments in high precision by analyzing lake sediments(Yancheva et al., 2007; Nakagawa et al., 2006).

In Asian region, climate is largely controlled by East Asian Monsoon(EAM). In summer, EASM (East Asian Summer Monsoon) brings moist and warm climate in the region, whereas EAWM (East Asian Winter Monsoon) is characterized as cold and relatively dry air originated from Siberian High, which intensified in boreal winter. According to paeloclimate archives, it has been said that EAM intensity are related to global climate change(Wang et al., 2001; Katsuta et al., 2007), thus it is important to reconstruct behavior of EAM.

As, Fe/Mn ratio, and Mass Accumulation Rate(MAR) in the sediment of lake Biwa show clear decrease of lake level in 30ka, which has lowest level in past 50kyrs. In same age, there is positive and negative peak in Sr and Nd isotope data respectively. These isotopic data indicates source materials and their contribution rates to sediment. The peak of isotopic data shows greater contribution of dusts from Taklimakan desert, which indicates either stronger Winter Monsoon, or southern shift of Westerly Jet. However, our data set requires higher resolution, so that we can separate source areas of sediment in detail. Furthermore we can reconstruct climate changes that occur in short time scale.

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