Lignin phenol biomarker records in the late-Quaternary California sediment

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Pollen records on the southern California sediment past 60 ka suggest that the vegetation in the southern California had changed in accordance with glacial-interglacial cycles (Heusser, 1998).

In this study, we attempted to reconstruct the paleo-vegetation of the southern California during the late-Quaternary using biomarker of specific organic compounds especially lignin phenols (a biomarker of vascular plants origin) in the southern California sediment (ODP 167, Core 1017E). The ratio of syringyl (S) to vanillyl (V) phenols (S/V ratio) increased since 15 ka. This result suggested that gymnosperms such as conifer had been dominanted speces until 15 ka, whereas angiosperm such as broad-leaf tree have been dominanted speces since 15 ka in the southern California region. The ratio of cinnamyl (C) to vanillyl (V) phenols (C/V ratio) of lignin were relatevely high around 15 ka and since 10 ka during interglacials which were relatively warming intervals. This tendecy suggested a contribution of herbaceous plant increased during warming intervals in the southern California region.