

# Reconstructing Millennial Scale Variability in Eastern Equatorial Pacific Hydrography Using a Multispecies Isotopic Approach

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## **Abstract**

We propose a high resolution study of two cores from the eastern equatorial Pacific with potentially high sedimentation rates. Our aim is to investigate the sensitivity of this region to millennial scale climatic variations during the last 60,000 years. Our approach is to exploit the vertical stratification of planktonic foraminifera species in the region and use multispecies oxygen and carbon isotope measurements to reconstruct upper-ocean hydrographic structure. In conjunction with measurements of sedimentary organic carbon which we also propose to do, we aim to produce an index of high frequency variations in upwelling intensity and productivity, which are tightly linked to atmospheric and oceanic circulation in the region. This is a pilot study aimed primarily at demonstrating the feasibility of our approach and refining it where deemed necessary. It is our intention to follow it with a proposal to carry out a thorough study of the eastern tropical Pacific with a focus on high-frequency climate variability, and with the long-term goal of characterizing the nature of such variability in the tropics and exploring its linkage to high latitudes.