

New measurements and compilation provide a 25,000 year view of global deep-sea radiocarbon

**DR. PATRICK (HE/HIM) RAFTER¹, WILLIAM R GRAY²,
ANDREA BURKE³, KASSANDRA COSTA⁴, JULIA
GOTTSCHALK⁵, MATHIS HAIN⁶, SOPHIA K.V. HINES⁷,
JAMES W. B. RAE³, JOHN SOUTHON⁸ AND TIMOTHY
DEVRIES⁹**

¹UC IRVINE

²Laboratoire des Sciences du Climat et de l'Environnement
(LSCE/IPSL)

³University of St Andrews

⁴Woods Hole Oceanographic Institute

⁵Christian-Albrechts-Universität zu Kiel

⁶University of California - Santa Cruz

⁷Lamont-Doherty Earth Observatory of Columbia University

⁸UC Irvine

⁹UCSB

Presenting Author: prafter@uci.edu

Here, using an updated compilation of published and newly measured marine microfossil radiocarbon ($\Delta^{14}\text{C}$), we examine the evolution of deep seawater $\Delta^{14}\text{C}$ over the past 25,000 years. Our new dataset has >1300 more observations than prior work, including new measurements from throughout the deep Pacific as well as the first glacial-interglacial record of deep Indian Ocean $\Delta^{14}\text{C}$. The improved spatial distribution and number of observations allows us to investigate prominent theories of ocean basin ventilation changes (e.g., the “Bipolar See-Saw” and the “Sub-Arctic See Saw”) from Heinrich Stadial 2 (»25,000 years BP) through the Last Glacial Maximum, deglaciation, and current interglacial warm period.