

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

**DR. PATRICK (HE/HIM) RAFTER<sup>1</sup>, WILLIAM R GRAY<sup>2</sup>,  
ANDREA BURKE<sup>3</sup>, KASSANDRA COSTA<sup>4</sup>, JULIA  
GOTTSCHALK<sup>5</sup>, MATHIS HAIN<sup>6</sup>, SOPHIA K.V. HINES<sup>7</sup>,  
JAMES W. B. RAE<sup>3</sup>, JOHN SOUTHON<sup>8</sup> AND TIMOTHY  
DEVRIES<sup>9</sup>**

<sup>1</sup>UC IRVINE

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

<sup>3</sup>University of St Andrews

<sup>4</sup>Woods Hole Oceanographic Institute

<sup>5</sup>Christian-Albrechts-Universität zu Kiel

<sup>6</sup>University of California - Santa Cruz

<sup>7</sup>Lamont-Doherty Earth Observatory of Columbia University

<sup>8</sup>UC Irvine

<sup>9</sup>UCSB

Presenting Author: [prafter@uci.edu](mailto: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.