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## Last Glacial Maximum ice shelf retreat and sea-ice dynamics in the Joides Basin, Ross Sea, Antarctica

**Chiara Pambianco**<sup>1,2</sup>, Lucilla Capotondi<sup>3</sup>, Federico Giglio<sup>2</sup>, Alessio Di Roberto<sup>5</sup>, Simon Belt<sup>6</sup>, Gesine Mollenhauer<sup>4</sup>, Alessio Nogarotto<sup>1,2</sup>, and Tommaso Tesi<sup>2</sup>

<sup>1</sup>Università Ca' Foscari di Venezia, Via Torino, 155, 30170, Venezia Mestre, Italy (chiara.pambianco@unive.it)

<sup>2</sup>CNR – National Research Council of Italy, ISP – Institute of Polar Sciences, Via Piero Gobetti, 101,40129, Bologna, Italy

<sup>3</sup>CNR – National Research Council of Italy, ISMAR – Institute of Marine Sciences, Via Piero Gobetti, 101,40129, Bologna, Italy

<sup>4</sup>Alfred Wegener Institute for Polar and Marine Research, Am Handelshafen 12, 27570 Bremerhaven, Germany

<sup>5</sup>Istituto Nazionale di Geofisica e Vulcanologia, Via Cesare Battisti, 53, 56125, Pisa, Italy

<sup>6</sup>Biogeochemistry Research Centre, School of Geography, Earth and Environmental Sciences, University of Plymouth, Drake Circus, Plymouth, Devon PL4 8AA, UK

Here we present preliminary results from the Joides Basin, one of the depressions placed on the continental shelf adjacent to the Ross Ice Shelf (RIS) edge during the Last Glacial Maximum (LGM). We studied a south west – north east transect composed of four gravity cores and one piston core collected along the axis of the Joides Basin in order to reconstruct the past-LGM glacial sedimentary facies and provide new stratigraphic information. A suite of organic biomarkers were used to reconstruct sea-ice conditions and retreat of the RIS during the last termination.

The last glacial termination has been broadly targeted as a potential analogue to current/future global warming, and many studies on this timeframe have been conducted in the RIS, which, with its buttressing effect on continental ice, and its connection to the surrounding marine environment, represents a key element in bridging atmosphere and ocean. The RIS balance and behavior, during rapid climate change, however, is still poorly understood. Many questions are still open regarding the RIS retreat and warming effects on both the atmosphere and ocean, and concerns remain about the reliability of the chronology of marine sediments recovered from this region.

Based on radiocarbon dates of bulk organic carbon and foraminifera, our proposed age model provides new results on the paleo-environmental changes in the Joides Basin as the system moved from an ice-sheet dominated environment to a distal ice-sheet-system. Our preliminary results provide new information to better improve our understanding of the RIS modalities of retreat and the related effects to the surrounding marine and glacio-marine environment during the last deglaciation and Holocene.