



## **Pleistocene grounding zone wedge and unconformity from the LGM by high-resolution seismic data (Joides Basin - Antarctica)**

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Seismic data recorded during the 2004-2005 Programma Nazionale di Ricerche in Antartide Oceanographic Cruise in the Joides Basin (Western Ross Sea) are presented. These provide a detailed determination of near-surface units, useful to recognize the different sedimentary bodies in an area subjected to the action of the ice sheet during and since the Last Glacial Maximum (LGM). The dataset includes about 1000 miles of high-resolution seismic profiles using a 400-900 J 120-Tip Sparker array and a 3.5 kHz Sub Bottom Profiler, recorded simultaneously. The interpretation of the profiles shows the different seismostratigraphic features of the inner shelf of the Joides Basin. The sedimentary structure corresponding to the grounding zone wedge associated with the LGM, demonstrates that the deposits are variable in thickness. On the inner shelf, south of the threshold, there is a sector where the ice sheet advance eroded the previous deposits and marked by a LGM grounding zone wedge. This advance is also represented by subglacial till deposits. The erosive surface truncates other unconformities associated with preceding advances and retreats. It is sometimes well preserved, perhaps due to the structure of the Joides Basin. The LGM erosive event overlies all the preceding sedimentation episodes, indicating a lateral contribution as well, with the development of the basin cut across the present-day axes. The sedimentary series following the LGM is represented by an erosive unconformity overlying the preceding ones and sub-glacial till deposits, and covered with hummocky glacial-marine and draping marine deposits.