

## **Past Antarctic Ice Sheet Dynamics**

### **(PAIS)**

Carlota Escutia

*Instituto Andaluz de Ciencias de la Tierra (CSIC-UGR)*

The new SCAR Scientific Research Programme PAIS (Past Antarctic Ice Sheet dynamics) aims to improve understanding of the sensitivity of the Antarctic Ice Sheets to a broad range of climatic and oceanic conditions. The work of PAIS will focus on specific drainage basins in vulnerable areas of the Antarctic ice sheets. Study intervals span a range of timescales, including past “greenhouse” climates warmer than today, and times of more recent warming and ice sheet retreat during glacial terminations. The PAIS research philosophy is based on data-data and data-model integration and inter-comparison, and the development of “ice-to-abyss” data transects, extending from the ice sheet interior to the deep sea. The data-transect concept will link ice core, ice sheet-proximal, offshore, and far-field records of past ice sheet behaviour and sea level, yielding an unprecedented view of past changes in ice sheet geometry, volume, and ice sheet-ocean interactions. These integrated data sets will enable robust testing of a new generation of coupled Glacial Isostatic Adjustment-Ice Sheet-Atmosphere-Ocean models that include new reconstructions of past and present ice bed topography and bathymetry. The outcomes of PAIS will improve confidence in predictions of ice sheet and sea level response to future climate change and ocean warming.