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THE BELDC ICE CORE PROCESSING WORK FLOW

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This presentation provides an overview of the ice core workflow –from logging and processing in the field, (long-term) storage at Concordia station, transport to the Antarctic coast, shipping at temperatures below –50℃, storage and handling in the curational ice core stores in Europe to running a dedicated processing in the ice laboratories at AWI. We will focus on the infrastructure and procedures involved in the processing.
Once the ice core has been drilled at Little Dome C, it is embarked on a long journey until it is analysed in the participating laboratories. In the remote field sites, the ice cores are logged, i.e. measured and cut. Then, they go through initial processing steps and measurements, before being securely packed in special insulated boxes and shipped.
We addressed the cold chain carefully, starting from re-designed custom ice core boxes, bespoke reefer containers to cross the equator on board RV Laura bassi, and navigating from New Zealand to Italy around Cape Horn, to avoid the Suez Canal for safety.
An archive piece is partly stored at Concordia station, while the aliquots are moved by Basler BT-67 and traverse to the coast.
Once the samples arrive at the Alfred-Wegener-Institut (AWI) the main processing begins. There are multiple cold rooms available at AWI for different purposes of ice core handling. The large ice laboratory is set up for the processing with different kinds of saws for cutting the ice into the required sub-samples.

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