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MULTIDISCIPLINARY STUDY OF HOLOCENE SEDIMENTATION IN LAKES ICALMA AND PUYEHUE (CHILEAN LAKE DISTRICT, SW ANDES)

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The Belgian ENSO-CHILE project aims to provide a record of paleo-precipitation in the Chilean Lake District over the last 12000 years, in order to define the regional impact of ENSO-events. ENSO-events in the area induce precipitation anomalies, and should be recorded in the lakes as changes in terrigenous sediment supply. Additional attention will be paid to identifying millennium-timescale abrupt climate changes during the Holocene and their effect on the ENSO-record, but also to pluri-decadal cyclicity overprints on ENSO-intensities.

Four long sediment cores were collected from two lakes in the area. The two lakes were selected after high-resolution reflection seismic reconnaissance surveys in 6 lakes. In each of the two selected lakes, two coring sites have been identified on basis of the seismic data, one in a proximal and one in a distal depositional setting. Field work around the lakes has allowed to define the sediment source characteristics and mineralogies, the present-day vegetation and the geomorphology of the drainage basins. Surface sediment sampling in the lakes provides information on the spatial variability in present-day terrigeneous sediment supply and dispersion. Multi-disciplinary analysis of the cores is currently underway and includes: physical properties, sedimentology, mineralogy, dating, tephrochronology and pollen studies. The chronology will be established by Pb, Cs and C dating, as well as by correlation of sedimentary events with historical records. The most suitable and promising

proxies will be selected after the first analyses.
The project result will be a well-dated, multi-proxy record of Holocene variations in terrigeneous sediment supply. It will be integrated with a pollen record of vegetation changes, the tephrostratigraphy and the regional seismic-stratigraphy, in order to reconstruct the paleoenvironmental changes that affected the area, in terms of precipitation and temperature variations.