

First results from the Lateglacial and Early Holocene fill of Lac Retournemer (Vosges, France): another INTIMATE Example

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One of the current activities of the INTIMATE Network is the organization of bi-annual research training schools for Early Career Scientists. During these INTIMATE Example summer schools, fieldwork, lectures and lab-based activities are executed focusing on a central theme or specific site. The fourth INTIMATE Example Research Training school centered around the coring of Lac Retournemer in July 2018, and aimed at collecting a Lateglacial-Holocene record of past environmental change. Retournemer is located in the High Vosges mountains, and is a nice example of a cirque lake that was formed during the Weichselian. Lac Retournemer is located at 776m above sea level in the head-waters of the Vologne Valley and is currently a 11m deep lake behind a glacial threshold consisting of igneous rock. This area is one of the wettest areas in France with high precipitation values and might therefore be a good site to record Icelandic tephras. Previous investigations show that at least 15m of partially laminated sediments are present in this basin with also a possible occurrence of Laacher See Tephra. During the summer school we obtained a 18m sediment record before we reached the basal glaciolacustrine sediments at 29 m below water level. In the top part of the sequence, clear sediment fluxes can be observed which might be linked to human impact or increased precipitation events in the catchment. The first results from the basal part of the sequence show a clear Lateglacial and Early Holocene record with Laacher See Tephra in a laminated sequence and a possible occurrence of Vedde Ash in the more siliciclastic Younger Dryas sediments. The Loss on Ignition profile shows multiple fluctuations in the Lateglacial Interstadial and Early Holocene which might be linked to the oscillations in the INTIMATE event stratigraphy for this time period. Preliminary palynological results support the Lateglacial and Early Holocene age of the sequence and will be further explored to investigate the differences in response with other proxies such as chironomids, geochemistry etc. The occurrence of Laacher See and Icelandic tephras in the core will add to the existing tephra lattice for the Lateglacial and Early Holocene in Central and NW Europe.