



## **Stable Isotope Database: present and past archives**

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Paleoclimate data provide benchmarks against which the realism of the processes simulated by climate models can be assessed. Within this framework, it is essential to avoid introducing uncertainties associated with transfer functions and therefore to operate with robust proxies. The implementation of stable isotopes of water or carbon inside climate models motivates a synthesis of available data. Supported by the LABEX L-IPSL and involving a team of climate modelers and paleoclimatologists, this project aims to establish a worldwide database of  $\delta^{18}\text{O}$ ,  $\delta\text{D}$ ,  $\delta^{17}\text{O}$  and  $\delta^{13}\text{C}$  from oceanic microfossils, corals, ice cores, cave speleothems, lakes, tree rings, and vegetation leaves wax. The aim is to provide a global vision of the hydrological cycle during the LGM and other selected key periods (last 2000 years, Mid-Holocene, Dansgaard-Oeschger events, and the Eemian). It requires screening through hundreds of published oceanic and continental records, validating the selection of the data based on resolution and chronological information. We extracted  $\sim 900$  dated  $\delta^{18}\text{O}$  records from 650 marine sediment cores, 65  $\delta^{18}\text{O}$  records from 50 ice cores,  $\sim 200$   $\delta^{18}\text{O}$  speleothems records from 60 caves, and 540  $\delta^{13}\text{C}$  records from 290 marine sediment cores. An additional aspect of this project consists in the construction of an online portal providing an intuitive and interactive platform allowing selecting, visualizing, and downloading of the records included in this database, thus improving the distribution and comparison of paleoclimatic records from various sites.