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**TITLE:** Extending Glacier Monitoring into the Little Ice Age and Beyond

**SESSION TYPE:** Poster

**SESSION TITLE:** PP51A. Documenting and Understanding the MWP: LIA Climate Anomalies: Data and Models III Posters

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**ABSTRACT BODY:** Glaciers are among the best natural proxies of climatic changes and, as such, a key variable within the international climate observing system. The worldwide monitoring of glacier distribution and fluctuations has been internationally coordinated for more than a century. Direct measurements of seasonal and annual glacier mass balance are available for the past six decades. Regular observations of glacier front variations have been carried out since the late 19th century.

Information on glacier fluctuations before the onset of regular *in situ* measurements have to be reconstructed from moraines, historical evidence, and a wide range of dating methods. The majority of corresponding data is not available to the scientific community which challenges the reproducibility and direct comparison of the results. Here, we present a first approach towards the standardization of reconstructed Holocene glacier front variations as well as the integration of the corresponding data series into the database of the World Glacier Monitoring Service ([www.wgms.ch](http://www.wgms.ch)), within the framework of the Global Terrestrial Network for Glaciers ([www.gtn-g.org](http://www.gtn-g.org)).

The concept for the integration of these reconstructed front variations into the relational glacier database of the WGMS was jointly elaborated and tested by experts of both fields (natural and historical sciences), based on reconstruction series of 15 glaciers in Europe (western/central Alps and southern Norway) and 9 in southern South America. The reconstructed front variation series extend the direct measurements of the 20th century by two centuries in Norway and by four in the Alps and in South America.

The storage of the records within the international glacier databases guarantees the long-term availability of the data series and increases the visibility of the scientific research which – in historical glaciology – is often the work of a lifetime. The standardized collection of reconstructed glacier front variations from southern Norway, the western Alps and the southern Andes allows a direct comparison between different glaciers. It is a first step towards a worldwide compilation and free dissemination of Holocene glacier fluctuation series within the internationally coordinated glacier monitoring.

**KEYWORDS:** [0720] CRYOSPHERE / Glaciers, [1105] GEOCHRONOLOGY / Quaternary geochronology, [1621] GLOBAL CHANGE / Cryospheric change, [3344] ATMOSPHERIC PROCESSES / Paleoclimatology.

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**Previously Presented Material:**

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