



## **Seasonality changes recorded from 2280 year sequence of varved lake sediments in Central Finland**

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There are many studies concerning variable climate during Holocene times, especially Medieval warm period and the Little Ice Age. However, open questions concerning the variability of Late Holocene climate, especially beyond the major changes remain. Varved lake sediments create a unique possibility to study these climatic and environmental variations within annual and even seasonal resolution due to their precise time control.

Lake Kallio-Kourujärvi, located in Central Finland, possesses high quality varved sediments with organic laminae. Lamination consists from light layer representing spring, summer and autumn, with diatoms, pollen and insect remnants and from dark layer representing winter season with homogenous organic fine grained material deposited under ice cover. Both layer types contain mainly material of autochthonous origin. The lake is located in a remote area and thus anthropogenic impact (land use changes) is relatively small and restricted to last hundred years. Varve chronology was constructed and thicknesses measured with microscope under dark field illumination. Summer and winter layers were studied individually and thus this study represents information of small scale variations in even seasonal scale.

The aims of this study are to improve knowledge of the variable Late Holocene climate, shed light on changes in seasonality and to evaluate the impact of Little Ice Age and Medieval anomaly to the hydrological cycle in Northern Europe. We present initial data from about 2280 year long, continuous varve chronology constructed from Lake Kallio-Kourujärvi. The sediment sequence shows abrupt decrease in seasonality changes during the end of Medieval Warm period lasting about 500 years and again intensifying trend since about 600 years BP.