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Résumé

Workshop PACE – Prehistoric adaptation to Cold Environment

Pointer years in modern *Picea glauca* from the Giddings' collection (AD 1600-1941) : A tool for cross-dating and identifying extreme weather events in northwestern Alaska

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At the beginning of the second millennium AD, northwestern Alaska is the scene of significant climate and cultural changes. It is during this period of climatic instability of the transition from Medieval Climate Anomaly to Little Ice Age (AD 1000-1350), that appears the Thule culture, direct ancestor of the today's Inuit people (Mason 2017).

The exceptional preservation of wood remains and the unique collection of dendrochronological samples collected during the 1940's by archaeologist and tree-ring pioneer J.-L. Giddings make the northwest of Alaska a suitable area for dendro-archaeological studies. In a region where the climatic and chronological framework still needs considerable refinement, dendrochronology allows a multi-scalar analysis to provide an annual resolution of climatic events and by extension cultural phenomenon.

Our study is focusing on the identification of pointer years, which are benchmarks for cross-dating and identifying extreme climate events (Lebourgeois et Merian 2012). In this poster, we analyze a series of growth ring measurements of modern *Picea glauca* [Moench] Voss from the 400+ cores of the Giddings collection collected in the 1940's along the Kobuk River and nearby areas (Giddings 1941; Nash 2000) and present their potential for dendro-archaeological research in the region.

Our preliminary results show the presence of several pointer years that could be correlated to identified climatic events, many of which are volcanic eruptions (D'Arrigo et Jacoby 1999; D'Arrigo *et al.* 2013; Jacoby *et al.* 1999; Oswalt 1957). Recognizing these extreme climate events makes it possible to discuss their potential immediate impact on the subsistence economy of people in northwestern Alaska.

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