



## **Microfacies analyses of lake sediments provides information on changing seasonal precipitation patterns during the 8.2 ka event**

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The seasonally laminated varved lacustrine sediments from lake Holzmaar have been subjected to detailed microfacies investigations for a 409 year interval, encompassing the 8.2 ka event. Spectral analysis of this record provides evidence of decadal and century scale climate variability during the early Holocene. The close similarities between the identified climate cycles at Lake Holzmaar and those of the GRIP oxygen isotope record during the early Holocene suggest that the high frequency variations in both the regions were controlled by the same mechanism during this interval. The microfacies studies indicate that (i) the winters were drier and the summers shorter and cooler in Europe during colder periods in Greenland, (ii) in contrast to the present day climate in the Holzmaar region, summer rains were clearly reduced during the early Holocene, and (iii) the climate not only changed rapidly but recurring drier and wetter events were common during the studied period.