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Climate Signals from stable water isotope records for the last millennium from north Greenland

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Ice cores from polar ice sheets provide a unique archive for past climatic variations. But due to their remoteness Greenland and Antarctica are up to now still to large extent unstudied areas.
Deep ice cores represent single spots. To get an estimate for the regional representativeness of one ice core and to set the results from deep cores into a wider regional picture more drill sites are necessary covering a larger area.
A set of 13 shallow inter-mediate depth (100-150 m) ice cores were drilled during the AWI-North Greenland traverse (NGT) in the 1990ies. It covers 500 to 1000 years back in time and offers the possibility to assess regional representativeness.
These 13 single records were analyzed for their water isotopic composition (delta18O) and have been averaged to produce an isotope stack for North Greenland.
The main objectives of this study are 1) to analyse this new dataset for its spatial variability and to evaluate the impact of isotopic noise, 2) to assess whether stable water isotope records from sites with very low accumulation rates can also be interpreted as climate signals, 3) to present a new stacked isotope record and 4) to interpret this in terms of paleoclimate (temporal variability, relation to large scale climate information from other ice-core records etc.).