



Spatial structure of North Atlantic air temperature trend sign changes and NAO index

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A simple technique of fitting, in a non-linear way, continuous line segments to a time series was developed and applied to the last five decades surface temperature from several databases. The spatial structure of the spatial variable breakpoint position shown a strong spatial coherency, with neighbouring regions experiencing similar behaviour. This technique allows the exact calculation, for each region, of the year were the temperature inversion occurred (the cooling stooped and the warming started) . The statistical significance of of the method is special high in the north Atlantic region were the increase of explained variability surpass the 50%, when compared with a simple linear trend method. The two more significant breakpoints observed at this region coincide with the NAO breakpoints, which in turn coincide with the changes in position of the Iceland low (Hilmer and Jung 2000, Tomé et al 2004). In this context, the recent evolution of temperature in the Baffin Bay region may be interpreted in the light of changes in the position and intensity of the Icelandic pressure low with the delayed onset of warming in that region being caused by the anomalous behaviour of the NAO.