



Geographically differentiated response to the Younger Dryas climatic fluctuation at both sides of the South Atlantic

L.M. Dupont (1), A. Paul (2), H. Behling (3)

(1) Marum University of Bremen (dupont@uni-bremen.de), (2) Paleomodeling University of Bremen (apau@palmod.uni-bremen.de), (3) Palynology University of Goettingen (Hermann.Behling@bio.uni-goettingen.de)

The ocean circulation, in particular the Atlantic meridional overturning circulation (MOC) has strong impact on global climate, both at high and low latitudes, but the response varies geographically. Palaeorecords for South America and Africa show vegetation changes in association with fluctuations in humidity during the Younger Dryas period, when the MOC was reduced. Northern South America and West Africa became drier and southeastern Brazil became wetter. We compiled a map of tropical vegetation development in South America and Africa for the Younger Dryas after our own data and reconstructions from literature. Previous modelling work about fresh water input in the North Atlantic and Arctic oceans on the MOC under modern conditions, and the consecutive effects on global temperature and precipitation patterns explain part of the pattern found in the palaeoclimate records. However, these fresh water experiments have not been simulated under glacial conditions. Here, we show the preliminary results from the Earth System Climate Model of the University of Victoria, which allows the integration of a dynamic vegetation, to focus on the induced precipitation anomalies and the shifts in vegetation distribution in western Africa and eastern South America.