



Centennial resolution record of vegetation change from glacial sediments of the Cariaco Basin

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New palynological information from the Cariaco Basin covering MIS 3 (60-25 ka BP) is presented. The high-resolution analysis from marine core MD03-2622 provides an insight into the response of the northern South American vegetation to climate changes during MIS 3, specifically during Heinrich events. In general terms, the results are in agreement with previous paleoclimatic reconstructions indicating that main changes were driven by north-southward displacements of the seasonal migration of the Intertropical Convergence Zone, controlling the distribution of humid and dry conditions over the continent. The vegetation response to these climate shifts could be classified into three different “modes”: 1) an interstadial mode characterized by high pollen concentrations and a maximum extension of semi-deciduous and evergreen forests, 2) a stadial mode characterized by lower pollen concentrations and an increase of salt-marshes, herbs, and montane forests, and 3) a Heinrich event mode characterized by the lowest pollen concentrations and abrupt increases of salt-marshes. Our pollen results are significant because they show a differentiated response to Dansgaard/Oeschger cycles and Heinrich events with clear extremes during Heinrich events, demonstrating that the vegetation of South America is highly sensitive to rapid climate changes.