



Pacing of middle Eocene climate during the Middle Eocene Climate Optimum and the Chron C19r event – new results from the expanded ODP Site 1260 in the tropical western Atlantic.

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Here we present new results from ODP Site 1260 retrieved during ODP Leg 207 characterized by an expanded middle Eocene (C18r through C21r) section of the tropical western Atlantic. The high quality sedimentary succession shows pervasive cyclicity in physical property data, as well as good biostratigraphic and magnetostratigraphic age control covering magnetochrons C18r to C20r. For a detailed cyclostratigraphy we acquired, e.g., iron (Fe) and calcium (Ca) intensity records by XRF scanning on Site 1260 cores. XRF data were successfully used to revise the shipboard composite record and reveal an exceptional and unprecedented clear cyclicity for this time interval. In addition, the magnetochron C19r event can be unambiguously identified, also characterized by a 30 cm interval with lower Ca but higher Fe intensities. In the upper part of the investigated section the Middle Eocene Climate Optimum (MECO) is expressed as an increase in Fe and decrease in Ca intensities again reflecting a deepening of the CCD. Sedimentary cyclicity at Site 1260 is dominated by very pronounced precession cycles modulated by eccentricity cycles. Here we present the latest effort to orbitally tune the precession cycles to an astronomical target curve. This procedure will not only provide revised estimates for the duration of Chrons C18r through C20n but even more will give insight into the pacing of the C19r event and the very prominent MECO in relation to orbital forcing and implication on ocean chemistry.