

# Gelasian–Pleistocene calcareous nannofossil cyclostratigraphy for ODP Leg 154 (western equatorial Atlantic, north of Brazil)

**Eric de Kaenel**

DPR, Chemin sous la Roche 4b, 1185 Mont-sur-Rolle, Switzerland; edekaenel@bluewin.ch

**David Bord**

Ellington Geological Services, 1414 Lumpkin Road, Houston, TX 77043, USA; borddavid@gmail.com

A new Gelasian–Pleistocene analysis is presented that is based on samples from ODP Leg 154 and calibrated with cyclostratigraphy. The preliminary results are based on 220 samples from 0 to 2.6 Ma, or one sample every 11 kyr. Time-series and cyclostratigraphic analyses were performed on the calcareous nannofossil data. These results provided strong evidence for an orbital control over the calcareous nannofossil populations. Spectral analyses on selected nannofossil groups revealed the obliquity cycle (41 kyr) as being the dominant contributor to the abundance and diversity patterns.

These new analyses also provided new ages for the bioevents used in the standard zonations (Martini, 1971; Gartner, 1977; Okada & Bukry, 1980) and in other biostratigraphic schemes, and finalise the Pleistocene zonation presented by de Kaenel (2017). More than 230 species from the genera *Algirosphaera*, *Alisphaera*, *Alveosphaera*, *Flosculosphaera* and *Syracosphaera* were observed and illustrated, some of which have never been recorded before in fossil sediments.

## References

- de Kaenel, E. 2017. Pleistocene calcareous nannofossil biochronology and biozonation. *INA16, Athens, Greece, September 25–28, 2017, abstracts*: 57.
- Gartner, S. 1977. Calcareous nannofossil biostratigraphy and revised zonation of the Pleistocene. *Marine Micropaleontology*, **2**: 1–25.
- Martini, E. 1971. Standard Tertiary and Quaternary calcareous nannoplankton zonation. In: A. Farinacci (Ed.). *Proceedings of the Second Planktonic Conference Roma, 1970. Edizioni Tecnoscienza*, **2**: 739–785.
- Okada, H. & Bukry, D. 1980. Supplementary modification and introduction of code numbers to the low-latitude coccolith biostratigraphic zonation (Bukry, 1973; 1975). *Marine Micropaleontology*, **5**: 321–325.