

## Calcareous nannofossils in petroleum exploration: improving correlations using palaeoecological events

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Calcareous nannofossils in petroleum research are powerful tools for high-resolution chronostratigraphy and calibration of seismic horizons. Nevertheless, standard studies mainly focus on the chronostratigraphic aspect and only little attention is paid to potentially correlatable paleoecological and/or paleoclimatic nanno-events. For example, the relatively long-lasting Miocene nannozone NN4 (2.5Myr; 15.7Ma to 18.2Ma) is only characterized by the LAD (Last Occurrence Datum) of *H. ampliaperta* and the FAD (First Occurrence Datum) of *S. heteromorphus*. Using the modified classification of Wei & Wise (1990) on datasets of 3 offshore Angola wells, the CTW variations (Cool to Temperate/Warm species) suggest four synchronous warm events in agreement with the foraminiferal planktic blooms usually recognized in the area. A first event is recorded at the NN2/NN3 transition while NN4 can be subdivided into three intervals using two intra-NN4 events. A last correlatable warm event characterizes the NN4/NN5 transition. The paleoenvironmental characterization of nannoflora can hence be used, at least regionally, as a powerful tool that may refine the standard chronostratigraphic zonation.

### Reference

Wei, W. & Wise, S.W. 1990. Biogeographic gradients of middle Eocene-Oligocene calcareous nannoplankton in the South Atlantic Ocean. *Palaeogeography, Palaeoclimatology, Palaeoecology*, **79**: 29-61.