

CYCLOSTRATIGRAPHY IN THE HAUTERIVIAN-BARREMIAN FRIELINGEN CORE (LOWER SAXONY BASIN, GERMANY)

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Astrochronology has proven to be a powerful method to constrain the duration of geological periods. However, in some geological periods, cyclostratigraphic studies give diverging results. For instance, the duration of the Hauterivian Stage was estimated as 3.5 myr in central Italy, and 5.9 ± 0.4 myr in South-Eastern France and South-Eastern Spain. In the Lower Saxony Basin, pale marl-dark shales cycles in Hauterivian and Barremian sediments are accompanied by changes in clay mineralogy, floral and faunal communities and geochemistry (variations in Ba, Si, Ca, Rb, Fe and Zr), which point to orbitally-forced climatic cycles. High-resolution (1 cm) scanning XRF results have been recently acquired on the Frielingen core which is situated next to Hannover (Germany) and encompasses the Hauterivian. On these geochemical data, time-series analyses will be performed to identify the orbital imprint on the alternations. This signal will then be used to give new insights on the duration of the Hauterivian.