



## **Cyclostratigraphy in the middle Badenian core Sooß/Baden (Vienna Basin, Austria)**

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The scientific borehole Sooß penetrated a succession of Early? to Middle Badenian (Langhian, Middle Miocene) sediments from the subsurface of the type section of the Badenian, the old brick pit Sooß near Baden (Lower Austria). The whole 100 m have been cored for the application of multistratigraphic methods, including sedimentology, geochemistry, magnetostratigraphy and magnetic climate proxies such as magnetic susceptibility.

The sedimentary succession consists of more than 95% of marly shales of the “Badener Tegel” (Baden Formation). The main lithologies are bioturbated medium to dark grey marls and shales with carbonate contents between 11% and 25% and organic carbon (Corg) percentages between 0.52 and 0.78. Rare intercalations include up to 20 cm thick sand layers with some shell debris and a light grey 5 cm thick tuff. Grain size analysis of the marls indicates mainly silty clays. Mean grain size ranges from 2 to 4  $\mu\text{m}$ . The sorting is rather poor. No distinct grain size trend has been recognized from top to bottom.

Carbonate contents increase steadily until the depth of 50m (25%), and then values decrease again. Discontinuities are present at 40, 85 m, and at 100 m depth. Carbonate contents and Corg display significant cyclic arrangements, including larger scale cycles of about 15 m and small scale cycles of about 1 – 2.5 m in thickness. Carbonate cycles are more distinctive than Corg-cycles, as Corg values differ only slightly and

peaks are not always easily recognizable. Four symmetrical cycles of carbonate and Corg have been observed in the depth interval of 85 to 95 m.