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# Towards an Aptian GSSP

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## Abstract

The base of the Aptian Stage is informally placed at the beginning of magnetic chron M0r. This definition is also used in the GTS2020 timescale. Recently, Frau et al. (2018) have revised ammonite stratigraphy at Gorgo a Cerbara, the site of the informal GSSP. They propose that ammonites found above the base of magnetostratigraphic M0r are of Barremian age (Martelites sarasini Zone). This revision of ammonite biostratigraphy provokes new discussions on the current informal base of the Aptian. If the revised ammonite-based chronostratigraphy is applied, the new base of the Aptian, as recorded at Gorgo a Cerbara, falls close to the base of the Oceanic Anoxic Event 1a. This corresponds to a rejuvenation of the Barremian/Aptian boundary of some 800 kyrs. The majority of the Aptian working group agrees to choose the base of Cisotopic anomaly marking the Oceanic Anoxic Event 1a as the event to define the base of the Aptian. A negative spike in the Corg- and Ccarb isotope record was first identified 25 years ago in a Tethyan pelagic limestone section (Cismon, N. Italy). Following the early studies numerous geochemical investigations demonstrated that the Aptian negative spike in the C-Isotope curve (up to several permil amplitude) is preserved in pelagic, hemipelagic, neritic and even continental Cretaceous environments. The C- isotope spike is intercalibrated with bio- and magneto-stratigraphy and provides an excellent and global marker for defining the base of the Aptian stage. Detailed high-resolution sections have been measured, for example, in pelagic sediments (Cismon), in intrashelf basin sediments (La Bedoule) or in outer shelf deposits (Cau) and also in DSDP/ODP/IODP sections. A GSSP based on geochemistry and possibly on data retrieved from core data will probably be proposed by the Aptian working group in the near future.

**Keywords:** Aptian, integrated stratigraphy, GSSP

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