Geophysical Research Abstracts
Vol. 19, EGU2017-10092, 2017
EGU General Assembly 2017

Integrated stratigraphy of Contessa quarry section (Umbria-Marche Apennines): new data on a potentially reference section for the Burdigalian GSSP

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In the last two decades the Neogene Period underwent a deep chronostratigraphic revision, and several GSSPs were ratified with the exception of those of Langhian and Burdigalian stages. In particular, the Burdigalian GSSP has only been temporarily placed by Lourens et al. (2004) at 20.43 Ma, in correspondence of the First Occurrence (FO) of the calcareous nannofossil species Helicosphaera ampliaperta.
In this framework, we present preliminary integrated stratigraphic studies from the Contessa quarry succession (Umbria-Marche Apennines). This well-exposed section has been sampled in the Scaglia Cinerea and Bisciaro formations, and is chronostratigraphically confined within the Aquitanian-Burdigalian time interval (Montanari et al., 1997). The sampled interval is about 18 m thick, and for the first 9 m, consists of alternating calcareous and marls nut-brown layers (Scaglia Cinerea Fm) and the upper part is made up of alternating calcareous and marls gray layers, interbedded with volcanic levels.
A total of 73 oriented hand samples from different stratigraphic levels has been collected for paleomagnetic analyses, whereas 78 samples were taken for biostratigraphic studies.
Paleomagnetic measurements were carried out at the laboratory of the Istituto Nazionale di Geofisica e Vulcanologia (INGV). For most of the samplings levels, pairs of standard regular specimens were cut in the laboratory. One specimen from each pair was subjected to stepwise AF demagnetization and the other "sister" specimen was subjected to thermal demagnetization. Paleomagnetic analyses have provided reliable directional data that allow the identification of a consistent sequence of magnetozones.
Micropaleontological analyses were performed on the calcareous plankton content. Planktonic foraminifera and calcareous nannofossils assemblages are common to abundant. The degree of conservation is moderate to good as far as nannofossils concerns and moderate for the foraminifera content. Preliminary analyses performed on a limited number of samples, confirmed and detailed the biostratigraphic attributions reported in Montanari et al. (1997).
The well exposed outcrops, the lithological cyclicity, the encouraging results from magnetostratigraphic and micropaleontological analyses, make this section suitable for high-resolution stratigraphic, cyclostratigraphic and astrochronologic studies, in the perspective of the definition of the Burdigalian GSSP.