

AGU FALL MEETING

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Magnetostratigraphy Of The Pleistocene Arda River Section (Northern Italy)

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Poster Hall (Moscone South)

Edoardo Monesi^{1,2}, **Giovanni Muttoni**² and **Giancarlo Scardia**³, (1)CNR Institute of Environmental Geology and Geoengineering - CNR-IGAG, Rome, Italy, (2)University of Milan, Department of Earth Sciences 'Ardito Desio', Milan, Italy, (3)Sao Paulo State University (UNESP), Rio Claro, SP, Brazil

Abstract:

We investigated the magnetic properties of the Pleistocene sediments exposed in the Arda river section in southern Po plain, northern Italy. This site contains a complete record of the transition occurring in the greater Po basin between marine sedimentation typical of the Early Pleistocene and continental sedimentation typical of the Middle–Late Pleistocene. The study of the magnetic mineralogy shows a dominance of Magnetite as the main magnetic mineral in almost the whole sequence except for the top where it changes into Hematite and for two minor intervals at the base and the middle of the sequence where the signal is carried mainly by sulphides. Five magnetic polarity reversals were recognized and used to construct an age model of sedimentation for the whole sequence, which was found to span in substantial stratigraphic continuity between ~2.5 Ma in the Matuyama chron across the Olduvai subchron, the Jaramillo subchron to the Brunhes–Matuyama boundary at 0.78 Ma, the correct interpretation of these magnetostratigraphic data has been proven by biostratigraphic data collected at the same time as the paleomagnetic sampling. According to this age model, the age of continentalization occurred in the Po basin between the Jaramillo (0.99 Ma) and the Brunhes–Matuyama boundary (0.78 Ma) and during the late Early Pleistocene climate revolution (EPR). Using magneto-lithostratigraphic data from other sections from the literature outcropping nearby, we reconstructed the timing of continentalization of the greater Po basin area during the EPR. The comparison between data coming from different sections in the Po basin prove a slight diachrony in the marine-continental transition occurring from the western to the eastern part of the plain due to the gradual infilling by continental sediments. This age for the continentalization of the northern Italian area combines well with the age of the best-dated sites with evidence of the earliest peopling of Europe.

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