

EGU2020-21250

<https://doi.org/10.5194/egusphere-egu2020-21250>

EGU General Assembly 2020

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## New chronology for the Ardèche river Upper Pleistocene evolution: relationships to glacial/interglacial cycles

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The Ardèche river canyon (Ardèche, France), is famous for its deep ingrown meanders and represent one of the most touristic assets of the region. It is also a central place of Upper Paleolithic human occupancy with numerous caves containing some of the most ancient and impressive rock art ever discovered like in the Chauvet cave, located at the canyon entrance, which artwork was dated at more than 36000 years cal BP (Quilès et al., 2016). The highly elaborated artwork of the cave, dated at more than 36000 years cal BP (Quilès et al., 2016), was kept in an exceptional state because of successive rock collapses of the cliff overhanging the cave that led to the complete closing of the entrance about 21,000 years ago (Sadier et al., 2012).

However, the late Quaternary river evolution remains poorly constrained as no absolute dating was conducted on the alluvial deposits, nor in other rivers of the Central Massif mountain eastern margin.

We present here the results of two independent dating campaigns based on the karst / river base level relationship and geomorphological observations conducted in both environments. We conducted topographical and geophysical surveys in the Ardèche river meanders and floodplains in order to map the different alluvial banks generations. Geomorphological observations were also conducted inside the canyon cavities and were compared to external observations on an altitudinal grids ranging from the current river thalweg to the + 45 m alluvial deposits.

We exploited U/Th dating method on some cave speleothems located along the river and sampled corresponding alluvial sediments for ESR dating, at the same altitudes. Results were thus compared to a relative chronological model in order to deliver a bayesian statistical model for the Upper Pleistocene deposits of the Ardèche river.

Chronological modelling can thus be compared to long term Pleistocene climatic evolution and show correlations with glacial/interglacial Upper Pleistocene cycles, and landscape modifications like meander shortcuts.