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PROGRAMME
ABSTRACTS
AGM papers

Climatic conditions during interglacial and glacial phases in Argentine pampas based on stable isotope analysis of fossil mammals

*Dánae Sanz Pérez[1,2], Manuel Hernández Fernández[1,2], Rodrigo L. Tomassini[3], Claudia Montalvo[4], Elisa Beilinson[5], Germán M. Gasparini[6] and Laura Domingo[1,2,7]
[1]*Universidad Complutense de Madrid, Spain*
[2]*Instituto de Geociencias (CSIC, UCM), Spain*
[3]*Universidad Nacional del Sur-CONICET, Argentina*
[4]*Universidad Nacional de La Pampa, Argentina*
[5]*Centro de Investigaciones Geológicas (CONICET-UNLP), Argentina*
[6]*Museo de La Plata-Universidad Nacional de La Plata, Argentina*
[7]*University of California, Santa Cruz, USA*

Profound climatic changes, related to the alternation of glacial and interglacial periods, took place during the Pleistocene. We have evaluated the variability of mean annual precipitation (MAP) and mean annual temperature (MAT) in the Argentine Pampas (La Pampa and Buenos Aires Provinces) during three phases: Last Interglacial (LIG, ~125,000 calBP); Last Glacial Maximum (LGM, 28,170–19,849 calBP) and post-Last Glacial Maximum (post-LGM, 17,281–11,500 calBP). The estimation of these parameters was based on tooth enamel $\delta^{13}C$ and $\delta^{18}O$ isotopic data of equids and cervids from nine fossil sites. During the LIG, we calculated a MAT of 15.9°C but MAP could not be estimated. In the LGM, a MAT of 14.8°C and a MAP of 552 mm were calculated. During the post-LGM, we calculated a MAT value range from 14.6 to 17.0°C and MAP from 480 to 1,229 mm. Variability of post-LGM localities parameters may be due to the alternation of warm (*e.g.* Bølling-Allerød) and cold (*e.g.* Younger Dryas) events. Changes identified seem to be controlled by alterations in atmospheric circulation. Thanks to current atmospheric circulation models and the estimated MAT and MAP of each phase, we propose differential atmospheric scenarios that explain such climatic changes across the Late Pleistocene.

Dyrosaurids have a unique postcranial anatomy

*Isaure Scavezzoni and Valentin Fischer
Université de Liège, Belgium

Dyrosauridae is a family of neosuchian crocodyliformes known from both terrestrial and aquatic environments across the Cretaceous–Palaeogene transition. The postcranium of dyrosaurids comprises astonishing features such as their vertebra with hypapohyses and tall neural spines, their well-developed pelvic girdles, and stout limbs, *etc*. However, their postcranial anatomy has long been overlooked, obscuring both their locomotive adaptations and the magnitude of their disparity. From this point of view, we thoroughly analysed the entire anatomy of the key dyrosaurids *Congosaurus bequaerti* and *Hyposaurus natator*, along with other extant (Crocodylia) and extinct Crocodyliformes (Thalattosuchia). In parallel, we also produced a comprehensive dataset of 187 traits on 27 taxa, largely covering the cranium and postcranium of exemplar crocodyliforms. These data were analysed following principal coordinate analysis (PCoA) to envision the morphospace occupation of Dyrosauridae, Thalattosuchia and Crocodylia. Our data report that Dyrosauridae displays a unique postcranial architecture, considerably contrasting with that of Crocodylia,