



# 3rd Palaeontological Virtual Congress

**Book of Abstracts**

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### **3<sup>rd</sup> Palaeontological Virtual Congress**

#### **Book of Abstracts**

#### **Palaeontology in the virtual era**

From an original idea of Vicente D. Crespo

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## CROCODYLOMORPH TRACE FOSSILS FROM THE AREIA DO MASTRO FORMATION (BARREMIAN), CABO ESPICHEL, LUSITANIAN BASIN (PORTUGAL)

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crocodylomorpha, Cretaceous, Portugal, footprints, swimming traces

At least 700 crocodylomorph trace fossils were discovered in 2021 at Ribeira do Chapim tracksite (Cabo Espichel, Sesimbra, SW Portugal) in one limestone bed on top of the Areia do Mastro Formation (lower Barremian), deposited in a carbonate shallow lagoon environment, under a tropical climate. This bed is exposed in two different areas, both with footprints and swimming trace fossils of crocodylomorphs. These two track-bearing surfaces measure 70 and 45 m<sup>2</sup>. The footprints are similar and most of them are tetradactyl. However, there are also some pentadactyl footprints, most of the pes footprints presents a heel mark. The footprints have several sizes: the smaller footprints are 10 cm long by 10 cm wide (manus) and 15 cm long by 10 cm wide (pes) and the larger footprints are 14 cm long by 15cm wide (manus) and 27 cm long by 20 cm wide (pes). The arrangement of some sets of prints allows us to identify five trackways. The swim traces are elongated, with 1 to 4 digit impressions, and are located throughout all the surface. Moreover, a deep and longitudinal trace is documented, which we interpreted as a possible tail drag mark. This new tracksite is the third site with ichnological evidence of crocodylomorphs in the Lusitanian Basin, and the first for the Cretaceous. The presence and abundance of walking and swimming trace fossils in the same track-bearing layer made by several crocodylomorphs that were walking floating or diving underwater is unusual in the fossil record and will allow us to learn more about the paleoecology of this kind of tetrapod and discuss the possible relationships between their behavior and the environment in which they lived.