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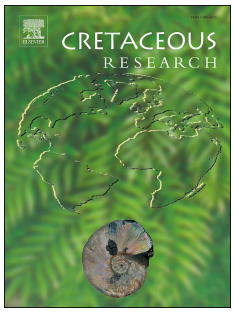

Carcharodontosaurids remained extinct in the Campanian-Maastrichtian: Reassessment of a fragmentary maxilla from Presidente Prudente Formation, Brazil

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Carcharodontosaurids remained extinct in the Campanian-Maastrichtian: reassessment of a fragmentary maxilla from Presidente Prudente Formation, Brazil

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Abstract

Carcharodontosauridae and Abelisauridae are two coexisting clades of theropod dinosaurs from the Cretaceous of Africa, South America and possibly Europe. The oldest and most recent carcharodontosaurid remains are from the Kimmeridgian-Tithonian of Africa and Turonian of South America, respectively. Recently, a fragmented maxilla bearing a single in-situ tooth (UFRJ-DG409-R) from the Maastrichtian of Brazil has been interpreted as belonging to a carcharodontosaurid. We here reassessed the phylogenetic distribution of these material using morphological, morphometric and phylogenetic analyses. If the morphology of the tooth is shared with carcharodontosaurids and abelisaurids, the morphometric analyses found the crown in the same morphospace as abelisaurids, and the phylogenetic analysis performed on a dentition-based datamatrix retrieved it among Abelisauridae. The maxilla also shares features with both groups, yet the horizontal striations on the paradental plates of UFRJ-DG409-R support abelisaurid affinities. Our data strongly suggest that these specimens belong to