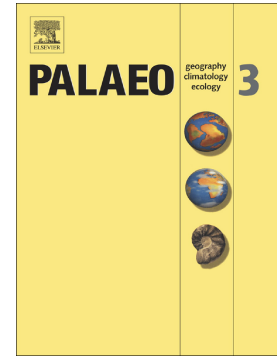


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## Evolution of the carbon isotope composition of atmospheric CO<sub>2</sub> throughout the Cretaceous

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### **Abstract:**

Although atmospheric CO<sub>2</sub> has been extensively described as a primary driver of Phanerozoic climate and carbon cycle disturbance, little is known about its carbon isotope composition ( $\delta^{13}\text{C}_{\text{CO}_2}$ ) during pre-Cenozoic times. We reconstruct for the first time the evolution of  $\delta^{13}\text{C}_{\text{CO}_2}$  during the whole Cretaceous period based on reference curves of  $\delta^{13}\text{C}$  values of Tethyan marine bulk carbonates ( $\delta^{13}\text{C}_{\text{carb}}$ ) and  $\delta^{18}\text{O}_{\text{PO}_4}$  values of fish tooth enamel. We test this method against that based on the oxygen and carbon isotope ratios of high-latitude benthic foraminifera ( $\delta^{13}\text{C}_{\text{foram}}$ ) recently implemented for the Cenozoic and closely

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