Goldschmidt 2022 Abstract
https://doi.org/10.46427/gold2022.11784

Zinc isotopes in marine food webs: case of study of Brazilian coast archaeological sites

JESSICA CARDOSO[1,2], BENJAMIN T. FULLER[1], PAULINE MEJEAN[1], ANDRÉ STRAUSS[2] AND KLERVIA JAOUEN[1]

[1]Géosciences Environnement Toulouse/CNRS
[2]University of São Paulo
Presenting Author: jessicamcardoso@usp.br

In archaeological contexts, marine dietary interpretations mainly rely on nitrogen isotope ratios. Recently, it has been shown that zinc isotope ratios ($\delta^{66}Zn$) can be a promising tracer to get access to trophic level information in the absence of collagen preservation and to obtain complementary information to other dietary tracers. However, in marine environments, only arctic marine mammals have been studied so far, and most studies have been conducted on terrestrial food webs. The understanding on how $\delta^{66}Zn$ can track diverse types of marine food consumption is crucial in archaeology, as the onset of this type of consumption could be related to important evolutionary steps. Pre-colonial archaeology of the Brazilian coast is characterized by huge shellmounds, locally known as *sambaquis* (8000 to 2000 years BP), and, later on, fishmounds (2000 to 600 years BP). We sampled mammal and non-mammal teeth and bones of several *sambaquis*, as well as teeth of humans buried at the sites, and conducted Zn isotope analyses. We will present how Zn isotope ratios differ between animals of various metabolism (e.g. mammals, birds, reptiles and fishes), how Zn isotope ratios compare to other tracers ($\delta^{13}C$, $\delta^{15}N$, $^{87/86}Sr$) in these environments and how this tracer can differentiate human populations associated to fishmounds and shellmounds.