



The local marine reservoir effect in coastal systems: the case of the Southeastern Brazilian coast

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The radiocarbon (¹⁴C) Marine Reservoir Effect (MRE) is the result of ¹⁴C depletion in the ocean due to the slow carbon exchange with atmosphere, especially for deep waters (Alves et al. 2020). The MRE is influenced by global environmental and climatic changes and is represented by an empiric calibration curve, the more recent version published by Heaton et al. (2020). Local offsets from the marine curve (ΔR) are studied to account for regional variability of this effect. In coastal regions the scenario is considerably complex and the MRE is influenced by carbon sources that exhibit a wide range of isotopic signatures. This has the effect of hindering accurate ¹⁴C chronologies on the coast, where ΔR is subject to the interplay of the hydrography with factors such as the regional geology, upwelling and sea-level variations. In this work we evaluate these aspects in the context of the Brazilian coast and the few data available for this region.

References

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