



It is exciting to see such large spatial differences in elemental ratios in the modern ocean. These findings are difficult to match with our current ideas of transport and mixing of water masses and, therefore, present a challenge for ocean modellers to reconcile these patterns with what we know about ocean physics and the sinks and sources of these chemical elements, adds Prof. Dr. Andreas Oschlies, head of the Department of Biogeochemical Modelling at GEOMAR and also co-author of the study.

Researchers must now understand what causes the current variability of elemental ratios and what effects it has. If we have a profound understanding of the underlying mechanisms, we will be able to better use the elemental ratios for different marine scientific disciplines and questions, Dr. Lebrato emphasizes, who now works at the Bazaruto Center for Scientific Studies (BCSS) in Mosambique, with a view to the future. This is particularly relevant for marine regions near the coast and in high latitudes of the sub-polar regions. Here, the methods used to reconstruct ocean temperatures in the past must be corrected with respect to the regional ecosystems.

**Reference:**

Lebrato, M., Garbe-Schönberg, D., Müller, M. N.4(arbPM. )-3(B)4(l)5(a)-9ncro

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