Biodiversity in a rapidly changing world

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ABSTRACT :

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Sharing a plate in the deep: the trophic ecology of 13 deep-sea shark species from New Zealand

An important diversity of organisms lives in the depths of the oceans, including numerous species of sharks. The trophic ecology of these species is still poorly known due to the difficulties to access this remote environment and observing individuals directly. The use of indirect methods has proved useful in addressing this problem. The most common technique has been stomach content analysis. Despite presenting some bias, this method provides essential information, other approaches such as stable isotopes (SIA) or fatty acid profiling (FAP) are more and more recognized to achieve more comprehensive ecological data.
Here, we used SIA to explore the trophic ecology of 13 deep-sea sharks species from New Zealand. δ13C, δ15N, and δ34S isotope ratios were measured on muscle and liver samples. Isotopic niches were then calculated using both two- and three-dimensional methods by comparing two isotopic ratios or the three of them at the same time. We highlighted differences and similitudes between species, separating them into four different trophic groups.