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Theme Session 008 - The Global Ocean Ecosystem: Patterns, Drivers and Change

VERTICAL VARIABILITY OF TROPHIC POSITIONS OF ZOOPLANKTON IN THE DEEP OCEAN

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Zooplankton plays a key role in oceanic ecosystems. However, the trophic ecology of organisms in deep layers of the ocean is poorly known. In this study we analyze the variability of trophic positions of zooplankton collected across three ocean basins in the epi-, meso and bathypelagic domains. Stable carbon and nitrogen isotopes were used as indicators of the sources of nutrients and positions within the food web. The enrichment in heavy nitrogen isotopes with depth and the correlation between surface and deep samples revealed that deep zooplankton was supported by local epipelagic production, subsequently processed through the water column. In addition the nitrogen isotope enrichment of carnivores vs. omnivores was consistent across ocean biomes and water layers, suggesting a similar trophic structure of the pelagic food web in the deep ocean despite variations in the nitrogen sources. Siphonofora, Chaetognata and Myctophida were the top predators while Calanoid Copepoda and Mysidacea displayed the lowest trophic positions. In contrast, carbon isotopes did not show significant variations with depth or trophic groups implying low influence of coastal production in deep ocean food webs.