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Influence of estuarine dynamics on the macrobenthos spatial variability in the southeast continental shelf of Brazil

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The occurrence and distribution of the benthic macrofauna is often related to the physical and chemical characteristics of the environment, especially to the food availability. In the northern coast of Rio de Janeiro, the Paraíba do Sul River (RPS) has a fundamental role in the sediment and nutrients transport. This study focuses on the contribution of the RPS and its effect on the benthic macrofauna on the Campos Basin continental shelf, in two different periods. Physical and chemical analyses of the sediment were conducted and the macrofauna was identified. Multivariate analyses were used to compare the distribution patterns of the benthic associations, as a function of the depth gradient and for the two sampling periods. The PCA analysis showed that stations located in shallow waters were strongly correlated with temperature, salinity and chlorophyll a; while pheophytin, the degree of sediment sorting, total carbonate and organic matter were correlated with stations at greater depths. Polychaeta and Crustacea were the most important groups. The species association pattern showed significant differences in the interaction between the sampling periods and depth gradient. The macrofauna showed significant variations in composition and abundance, correlated with the sediment variables. This study provided evidence of a division of organic matter input in the trophic net through primary production in shallower waters, and from organic detritus in deeper waters. The contribution of the environmental variables differed between the two macrofaunal associations, suggesting that these associations occupy distinct niches on the continental shelf adjacent to the RPS.

Biography

Ilana R Zalmon has completed her PhD on 1995 from University of Sao Paulo, Brazil and Postdoctoral studies from University of California at Santa Barbara. She is a Professor and Marine Researcher on Community Ecology at the Centre of Bioscience and Biotechnology from the University of North Rio de Janeiro. She has published more than 45 papers in reputed journals and has been serving as a referee member of repute.

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