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Marine meiofaunal macroecology and paleoecology: microfossil Ostracoda and Foraminifera as models

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Small benthic organisms, meiofauna, have been investigated less intensively compared to larger macrofauna, resulting in greater taxonomic uncertainty and less census data accumulation. However, they are the most abundant and diverse group of (non-microbial) organisms in marine sediments. Hundreds of specimens and dozens of species can be obtained from small amount of sediment. Two taxa of meiofauna, the crustacean Ostracoda and protozoan Foraminifera are known as microfossils. Their microscopic-size hard parts (carapace or test) are abundantly preserved as fossils. Thus, meiofauna is an ideal, but under-exploited resource for biodiversity and ecosystem research on large spatial and temporal scales: macroecology and paleoecology. In this talk, I will describe this perspective and its strengths and limitations with specific examples of deep-sea diversity patterns and shallow-marine conservation paleoecology. Integrative macroecology and paleoecology of meiofauna in conjunction with those of macrofauna will improve our understanding of global diversity patterns and their controlling factors in changing oceans.