**Community assembly and co-occurrence network complexity of interstitial microbial communities in the Arctic (investigation of ciliates in the White Sea)**

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**Abstract**

The Arctic coastal ecosystem provides an important habitat for marine interstitial microbial communities and plays a crucial role in biodiversity and ecological functioning [1, 2]. In order to better understanding the response of interstitial ecosystem to rapid Arctic climate change, community composition, structure and spatio-temporal patterns of interstitial ciliates in Gryaznaya bay of White Sea from 2009 to 2019 were investigated. In total, 5 genera and 23 species were discovered, with *Apotrachelocerca arenicola* and *Remanella* *margaritifera* as the dominant species. Vertically, biodiversity indices showed a decreasing trend, likely due to lack of oxygen in the deeper layer. Temporally, only species abundance showed an increasing trend from May to September. Niche breadths of interstitial ciliates between May and June were comparable, while other months (July-September combined) had a significant higher niche breadth than those of May and June. Temperature showed an increasing trend from May, June to other months~~.~~ Moreover, co-occurrence networks analysis indicated less competition between interstitial ciliate species. Furthermore, our results reflected that the contribution of stochastic processes to the ciliate community assembly was insignificant.

**References**

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