



The acid-base system of the Baltic Sea

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The marine acid-base system is relatively well understood for oceanic waters, where it is controlled to large degree by the CO₂ system. The structure and functioning of the acid-base system is, however, less obvious for the coastal and shelf seas due to the number of regionally specific anomalies. In this context the Baltic Sea can be considered as a very complex ecosystem, in which on one hand the low buffer capacity makes the seawater vulnerable to acidification, and on the other hand the sea is exposed to various anthropogenic and natural influences which have the potential to change the acid-base system and thus also the seawater pH and all pH-related processes.

This study summarizes the last few years of the research on the acid-base system in the Baltic Sea. The presentation addresses number of peculiarities and local anomalies that have been recently identified in the basin, namely:

- influence of organic alkalinity on the CO₂ system,
- anomaly of borate alkalinity,
- remineralization of terrestrial and marine dissolved organic matter,
- transformations of the CO₂ system in the estuaries of alkalinity-rich rivers,
- dissociation constants in the brackish waters,
- alkalinity development under anoxic conditions,
- long-term alkalinity trend and its consequences.