Abstract: Coastal waters like the Baltic Sea are characterized by low inorganic alkalinities and high concentrations of dissolved organic matter (DOM). In previous studies, the contribution of organic compounds to the marine acid-base system in coastal waters has mostly been ignored based on the assumption that coastal waters exhibit the same conditions as oceanic waters. The effect of concentrations and acid-base properties of total DOM and humic/fulvic acids as representatives were investigated in the context of seasonal and regional variability. The conducted field, laboratory and theoretical studies revealed a not negligible contribution of organic compounds from different substance classes to the alkalinity in the Baltic Sea.

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She defended her thesis in June 2017. At IO PAN Karoline Hammer conducts scientific research on the role of organic matter in the functioning of the acid-base system in the southern Baltic Sea. The marine acid base system especially in brackish waters like the Baltic Sea including its sophisticated biogeochemical processes is not yet fully understood and further research has to be done. Joint preliminary investigations gave promising results, which need to be interpreted and published as they are of major importance to the scientific community.