The Baltic Sea deeps as a natural models for the research of some basic sedimentary laws

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1. Shallow Baltic Sea is divided by basement and morainic ridges and sills into some small deeps with gently sloping. The oval form of the deeps and small depths makes them like independent water basins.

2. The studies of the sedimentation in the individual deeps of the Baltic Sea allow to see how mechanical separation is going on. The degree of separation is increasing from shallowest Arkona Deep (50-60 m) - to Bornholm and Gdansk Deeps (100-110 m) and Gotland Deep (248 m). The more deep basin is more full is separation and more fine muds are accumulating. The chemical elements are accumulating on the bottom according to fraction rules: sandy (1-0.1); silty (0.1-0,01) and pelitic (<0.01 mm). At shallow depths the elements precipitate according to sandy fraction (SiO_2, Zr, Sn, W); on the slopes - according to silty fraction (Fe, Cr, C_{org}, $SiO_{2amorphous}$, others), in the central part - according to pelitic fraction (K, Al, Fe, Mn, Ni, Co, others).

3. The periodic stagnation is characteristic for the Baltic Sea deeps. Due to this phenomena the sapropelic and sapropel-like (3-10% C_{org}) homogenous and microlaminated carbonate - manganese muds (up to 25-30% of $MnCO_3$) are forming in these deeps. The deeps are used as a model for the explanation of origin of ancient manganese ores on the land. Oxic ores (manganese - iron nodules and crusts) are forming on the bottom above the oxic-anoxic barrier in the water column. Transgression-regression stages are needed for the formation of carbonate-oxide manganese ores.

4. The Baltic Sea deeps are the excellent (and only one on the Earth) recent area in the World Ocean where mineral deposits are associated with organic muds (black shales in the future).