# Numerical simulation of the dynamics of nutrients pool in the Baltic Sea using the ecosystem model 3D-CEMB

Lidia Dzierzbicka-Glowacka, Jaromir Jakacki, Maciej Janecki, and Artur Nowicki
Institute of Oceanology PAN, Physical Oceanography, Sopot, Poland (arturnowicki@gmail.com)

The 3D ecosystem numerical model 3D-CEMBS has been used to investigate seasonal variability of nutrients concentration in the Baltic Sea. In addition this study shows vertical and horizontal distribution of nutrients in the Baltic Sea. Model domain is an extended Baltic Sea area divided into 600x640 horizontal grid cells. Aside from standard hydrodynamic parameters 3D-CEMBS has an ecosystem module that produces ecological variables such as: three types of phytoplankton, two detrital classes, dissolved oxygen and the nutrients (nitrate, ammonium, phosphate and silicate). The presented model allows prediction of parameters that describe distribution of nutrients concentration and phytoplankton biomass. 3D-CEMBS can be used to study the influence of different hydrodynamic and biogeochemical processes on distributions of these variables in a larger scale.