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Macrophyte vegetation development in paleolake Czechowskie (northern Poland), during the late-glacial and early-Holocene

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The aim of the research is to reconstruct late-glacial and early-Holocene development of paleolakes located in Central Poland. For our research we chose lake Czechowskie located in the eastern part of the Pomeranian Lakeland (northern Poland). The paleolake occupies the bottom of a subglacial channel formed on the outwash plain at the direct forefield of the glacier in the maximum extent of the Pomeranian phase. The 13 meters long sediment core was obtained with the use of Livingstone corer in Więckowski's modification. We focused on 3 meter bottom sediments and multiproxy high resolution analysis are being carrying out. The multiproxy research includes following analysis: pollen, macrofossil, diatom, Cladocera, stable isotope (δ13C and δ18O).
Macrofossil analysis is the first results from our project. First results of pollen analysis shows that the biogenic accumulation in Lake Czechowskie started in Older Dryas. Lithological results of the bottom lake sediments reveals twelve different lithological unit: (1) thin detritus layer (3cm), (2) massive calcareous gyttja greyish-cràme, (3) variously grained sand layer, (4) thin detritus layer (1cm), (5) massive calcareous gyttja greyish-cràme, (6) finely laminated calcareous greyish gyttja, (7) non-laminated calcareous greyish gyttja, (8) finely laminated calcareous olivaceous gyttja, (9) finely laminated non-calcareous black gyttja, (10) non-laminated calcareous greyish gyttja, (11) finely laminated calcareous greyish gyttja, (12) non-laminated calcareous greyish gyttja. Results of detailed macrofossil analysis and abrupt changes in lithology show rapid changes in environmental conditions during the late-glacial and early-Holocene. At that time in Czechowskie paleolake occured succession and colonisation aquatic plants which was the response of climatic and edaphic changes in environment.