

# **Combine geological and geophysical characteristics of AMCG complexes in NE Poland**

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Three anorthosite massifs and related rocks of AMCG suite (mangerite, charnockite, granite) were encountered within the anorogenic, magmatic terrane of Proterozoic age in NE part of Poland. This terrane, called Mazury Complex - a part of East-European Craton - has been recognized as a 200 km long belt, by magneto-gravimetric data. Transformations of potential field data and their visualisation were undertaken to get more informations about complicated deep crustal structure and to understand the evolution of rock complexes. Especially striking is the geophysical picture of two diapiric anorthosite massifs. They are imaged as very distinct negative anomalies both on gravity and magnetic maps. Big negative magnetic anomalies can be explained only by negative magnetization of rocks building these massifs. Neodymium and strontium isotope data were obtain for three different type of rocks from the Suwalki Anorthosite Massif: anorthosites, norites and gabbronorites, showing their crustal pre-history. Rapakivi and rapakivi-like granitoids have no characteristic imprint in potential fields. They have the form of multiple intrusions, as a result of several influxes of magmas, which resulted in partial melting of the lower continental crust. U-Pb zircon ages of Mazury rapakivi-like granitoids have given a pattern similar to Paleoproterozoic Svecofennian Domain of the Baltic Shield though Rb/Sr ages seem to be lower. Trace element pattern of different rapakivi granites reflect the same source of parental magma and its advanced evolution in time.