

## Editorial

The present issue of *Studia Quaternaria* deals with the application of geophysical methods to interdisciplinary research on near-surface geological medium and shows that these methods can be successfully applied to various research issues. Conducting research with application of broad spectrum of methods becomes somewhat a necessity, while rapid technological development contributes to greater possibilities for application of geophysical methods to different scientific disciplines, allowing complex analysis of researched issue. Up to date geophysical methods are the complementary element of research on near-surface geological medium, bringing important information about its two or three-dimensional variability. Additionally, this research is non-invasive and supplies with relatively quick results.

The collection of articles published in the present issue of *Studia Quaternaria* results from achievements presented at First All-Polish Symposium on Geointerdisciplinary Research Methods. In order to solve particular research issues, a number of geophysical methods have been applied, including geoelectrical, passive seismic and ground penetrating radar methods as well as measuring various parameters dependent on physical features of a geological medium. Electrical resistivity is a parameter reflecting in a proper way the variability of a medium with regard to lithology. Linking the variability of geological medium resistivity with data from drilling and quarrying allows precise determination of boundaries between geological layers. This confirms a high efficiency of electrical resistivity tomography application to near-surface research on a geological medium. The advantages and the effectiveness of electrical resistivity tomography (ERT) method are presented in the papers regarding such issues as identification of ground-water conditions in research on express-way road bed, evaluation of complex geological structure in context of land-use planning, evaluation of injection leak-proofness in deep foundation pit, stabil-

ity of slope, research on Quaternary sediments and structures. To identify shallow geological structure in urban areas the passive seismic (refraction microtremor) has been applied, using anthropogenic/environmental noise and multi-channel analysis of surface waves (MASW). Two papers deal with issue of application of ground penetrating radar (GPR) technique in geoarchaeological research. The first of them shows the results obtained in prehistoric flint mine areas, while the second one presents GPR application at a desert archaeological site in Saqqara (Egypt). It should be stated that desert is almost an ideal environment for GPR survey, because of electrical parameters of a geological medium. It was geological conditions and contrast between buried archaeological objects and natural deposits that allowed obtaining high efficiency of GPR method and results with high horizontal resolution and deep prospecting.

The mentioned above issues and research results were presented on 4th April 2014 at the symposium organized by the Faculty of Geology of the University of Warsaw, the Faculty of Geodesy and Cartography of the Warsaw University of Technology and the Faculty of Civil and Environmental Engineering of the Warsaw University of Life Science. The organizing committee consisted of Sebastian Kowalczyk, Dominik Łukasiak, Alicja Bobrowska, Anna Głowacka, Agnieszka Marcinowska, Radosław Mieszkowski, Sławomir Łapiński, Adrianna Tarnowska and Krzysztof Karsznia. The symposium was held under the honorable patronage of the Chief National Geologist Sławomir Brodziński, the Chief National Geodesist Kazimierz Bujakowski and the President of the Association of Polish Geodesists Stanisław Cegielski. More than 80 participants from all over the country took part in the symposium, representing science, business and governmental administration.

Sebastian Kowalczyk

