

Piotr Banasik, Jacek Kudryś: **The Verification of Result Calculation for Transformation from Krakow Local Network Coordinate System (ULK) Into The "2000" System with Application Permanent Station GPS "KRAW"** • Geomatics and Environmental Engineering 2007, Vol. 1, No. 2

The results of GPS signal observations in the points of III order geodetic horizontal network on the area of Krakow are discussed. The survey has a control meaning in reference to previous transformations from Krakow Local Network into the "2000" System. For surveys a few dozen points with maximal deviations were selected for mentioned coordinate transformation. The observations of GPS signals were carried by fast static method with reference to permanent station KRAW. Thank to that obtained results were free of errors resulting from I and II order network point coordinates. There were carried some analysis useful comparison co-ordinates resulted from transformation and field survey.

**Keywords:** geodetic network, GPS surveys, Krakow Local Coordinate System, "2000" Coordinate System

Jan Gmyrek: **Analysis of Influence of Additional GPS Measurements on Network Accuracy** • Geomatics and Environmental Engineering 2007, Vol. 1, No. 2

In the paper two straight line traverses (2400 m and 3600 m long), two straight triangulation chains (2400 m and 3600 m long) and a closed traverse (mean side length 520 m) were examined. In these networks one or two the additional GPS measurements were added. The mean error of the position GPS points were assumed 2, 3 and 4 mm. The presented analysis enable to come to the important conclusions with reference to applying additional GPS measurements to the analysed networks.

**Keywords:** additional GPS measurements in the networks

Ryszard Hycner, Józef Maślanka: **Land Use Plan as a Basis for Local Land Information System** • Geomatics and Environmental Engineering 2007, Vol. 1, No. 2

The aim of the paper is to show an idea of land information system creating, fulfilling demands specified in obligatory regulations and best adapted to the needs of local authorities. Analyzing geodesy and cartog-

raphy and spatial planning acts and regulations, and visible progress in national land information system creating, authors propose applying land use plans as a basis of local land information system. Authors also show, within this problem, their own detailed solutions, making possible stand-ardization of land use plans in digital form.

**Keywords:** land information system, spatial planning, GIS

**Joanna Klajn: The Research of Properties Market Prices in the Aspect of Time Influence • Geomatics and Environmental Engineering 2007, Vol. 1, No. 2**

The article presents the analysis of properties market prices in the aspect of time influence, which is showed for data base containing information about apartments, situated in Krowodrza district in Krakow, which where the subject of market transaction from September 2004 till October 2005. In research of time influence on market price of properties, are used three models: regression model, interval model and ratio form model. First part, present calculations based on all data base of 307 apartments. The results shows small part of time in individual explaining the changes of properties prices which equal 26 % in regression model and 3% in ratio form model. In interval model average variation equal 60.78 PLN/m<sup>2</sup> with average dispersion 0.31. In connection with it, in further calculations was used one more attribute-location, all data base was divided on 5 groups based on their belonging to cadastre districts. In each of this group, was analysed time influence on market price of properties using nonlinear regression model and ratio form model. Received results shows that time has small individual part in explaining changes of the properties prices that is why the character of these changes should be analysed with other attributes of property.

**Keywords:** regression model, ratio form model, interval model, attribute, research, analysis

**Marek Kulczycki, Marcin Ligas: Geographically Weighted Regression as a Tool for Real Estate Market Analysis • Geomatics and Environmental Engineering 2007, Vol. 1, No. 2**

The paper presents considerations on applying Geographically Weighted Regression to real estate market analysis and appraisal process. GWR is the explorative technique of spatial statistics enabling direct modeling of spatial heterogeneity by local fitting regression models. Application GWR results in set of regression parameters for each localization from the data set (real estate). These parameters make a basis for mapping non – stationarity of regression relationship, saying otherwise allow to map spatial variation in regression parameters. This kind of mapping brings to mind immediately taxation zones and taxation maps used in mass appraisal process.

**Keywords:** GWR (Geographically Weighted Regression), spatial heterogeneity, spatial autocorrelation, least squares method, appraisal

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Jan Macuda, Łukasz Macuda, Małgorzata Macuda, Renata Rogowska-Kwas: **Environmental Pollution With Oil-Products in the Refinery Area** • Geomatics and Environmental Engineering 2007, Vol. 1, No. 2

Uncontrolled seepages of hydrocarbons significantly affect the ground environment. They hinder gaseous exchange, limit access of the light, reduce concentration of dissolved oxygen, contaminated the soil and ground, disturb homeostasis, and before all – are toxic, mutagenic and cancerous to all living organisms. The results of analyses of the qualitative state of ground environment in the area of petrochemic installations on hydrocarbon content are presented in the paper. Basing on the comparison of geochemical analyses and threshold values in the Regulation about soil and ground standards of the Minister of Environment it was stated that soils and grounds in the refinery areas were polluted with oil-products. The admissible concentrations were exceeded, and thus the grounds were qualified to the treatment programs.

**Keywords:** petrochemic installations, aliphatic and aromatic hydrocarbons, ground water contaminated, remediation, soil and ground standards

Monika Mika: **Geodetic, Law and Organizational Aspects of Single Area Payment Scheme in Poland** • Geomatics and Environmental Engineering 2007, Vol. 1, No. 2

Area payment system was introduced in Poland in 2004 according to attending to European Union. System consist of system of area payment schemes (saps) and complementary national direct payments (CNDP). General characteristic of Single Area Payment Scheme was the aim of this paper. Special attention was taken on geodetic, law and organizational aspects relabeled to beginnings of formation this system in Poland. Lists of obligations law acts of SAPS, examples of documents from plot controls and description of inspection of area procedures was a part of this paper.

**Keywords:** System of Area Payment Schemes, Single Area Payment Scheme – SAPS, Complementary National Direct Payments (CNDP)

Katarzyna Styszko-Grochowiak, Urszula Witkowska, Janusz Gołaś: **Preliminary Studies of Content of Unburned Carbon in Fly Ash from Coal-Fired Fluidized Bed Combustion** • Geomatics and Environmental Engineering 2007, Vol. 1, No. 2

The application of “gradual roasting” test for the measurements of unburned carbon content in fluidized bed combustion (FBC) fly ashes was described. In “gradual roasting” method sample is heating in muffle furnace in three stages. Unburned carbon content in fly ash was determined by using thermogravimetry analysis (TGA-DTA). Thermogravimetric method was applied to assess of “gradual roasting” test. The error  $S_{\%}$  due

to the presence of interferences in matrix of fly ashes from fluidized bed combustion was determined. Correlation between "gradual roasting" test and thermogravimetry analysis of the unburned carbon content of FBC fly ash was discussed.

**Keywords:** unburned carbon, carbon analysis in coal fly ash, fluidized bed combustion

Maria Trafas, Teresa Eckes: **Soil-making Aspects in the Evaluation of Artificial Formations; Focus on the Wastes Formed after the Flotation of Zinc and Lead Ores** • Geomatics and Environmental Engineering 2007, Vol. 1, No. 2

The paper presents properties of post-flotation wastes, originating from the mining of zinc and lead ores. These properties are important in terms of biological reclamation. Among physical properties – particular attention was paid on the granulation, the possibilities of water retention and sorption properties. Among chemical properties – pH and the content of basic nutrients (Mg, P, K) in the forms easy to assimilate – were emphasized. Also the contents of Ca, Mg and Cu, Zn, Pb, Cd in water-soluble and  $\text{HClO}_4$  – soluble forms were given. Based on the analysis of these results, the results of Mining Enterprise Trzebieńka as well as carried out work connected with biological reclamation, the conclusions were made, referring to the usefulness of post-flotation wastes as the ingredient of soil for the growth of plants and the possibilities of the improvement of their properties in terms of the initiation of soil-making processes. The results of the studies can be taken into account during reclamation and remediation measures in similar objects.

**Keywords:** post-flotation wastes, physical properties, chemical properties, reclamation