

#### **4<sup>TH</sup>. TRADITIONAL INTERNATIONAL COLLOQUIUM ON GEOMECHANICS AND GEOPHYSICS, OSTRAVICE, JUNE 7 – 8, 2012**

This special issue of the journal "Acta geodynamica et geomaterialia" is dedicated to the best selected papers, which were presented during the 4th Traditional International Colloquium on Geomechanics and Geophysics. This colloquium was held in Ostravice (Czech Republic) in June, 7 - 8, 2012 by the Institute of Geonics, Academy of Sciences of the Czech Republic, in collaboration with the Green Gas DPB company under the auspices of the OKD company, the Landek Ostrava Foundation and companies Drager Safety, GEOTest, Hilti Česká republika, HUDDY DIAMONDS, Minova Bohemia, Novum servis, SANDVIK, as well as the colloquium scientific partners which are the Central Mining Institute in Katowice, Faculty of Earth Science and Engineering, University of Miskolc; the Institute of Rock Structure and Mechanics, Academy of Sciences of the Czech Republic and Faculty of Mining, Ecology, Process Control and Geotechnology, Technical University of Košice. The year 2012 marked the 30<sup>th</sup> anniversary of the foundation of the Institute of Geonics of the Academy of Sciences of the Czech Republic, which was the main organizer of the colloquium.

The 4th Traditional International Colloquium on Geomechanics and Geophysics enabled meeting of the experts mainly from the mining geomechanics, geophysics as well as geotechnical engineering. It was a case of forum for exchange of knowledge, information and experiences gained in the areas of research and practice. One of the main goals of the colloquium was to harmonize the needs of practice with scientific and research areas to set their further effective cooperation. Many distinguished foreign specialists, who have been involved in the field of rock engineering over many years, had been invited to take part in this meeting. These specialists were namely: Professors Jan Drzewiecki and Gregorz Mutke (GIG Katowice, Poland); Professor Yuzo Obara (Kumamoto University, Japan) and Professor Ove Stephansson (Geo Forschungs Zentrum, Germany); all of them presented the keynote lectures. International participation was also enhanced by other foreign experts dealing not only with various aspects of geomechanics and geophysics, but also with geotechnics. Experts from Australia, Germany, Hungary, India, Japan and Poland also presented many valuable scientific results and imparted their practical knowledge.

The programme of the 4th Traditional International Colloquium on Geomechanics and Geophysics was classified into the 4 sections, in which twenty-eight papers were presented and their extended abstracts were published. Their topics concerned mainly the underground coal mining (e.g. rockbursts and in situ reinforcing of mining undergrounds), rock stress problems (e.g. structural analysis for evaluation of the rock mass stress), geophysics (e.g. application of newly developed rotational sensor for monitoring of mining induced seismic events, induced seismic activity in the mine field) and laboratory research in geomechanics and geo-material behaviour area (e.g. analysis of the effect of moisture content and bending rate on the rock fracture toughness, permeability and volumetric changes in coal under different tests, effects of high temperatures on cement composite materials in concrete structures etc.).

We would like to express our thanks to all the colloquium participants, especially to all authors, who provided their papers for publishing in this special issue, and to all professional reviewers. Particular thanks belong to the Institute of Rock Structure and Mechanics, Academy of Sciences of the Czech Republic for printing this special issue of Acta geodynamica et geomaterialia. We can say that the main aim of 4th Traditional International Colloquium on Geomechanics and Geophysics was fully accomplished, which prove the next/below mentioned participant contributions.

Ostrava, April 2013  
**Petr KONÍČEK and Kamil SOUČEK**  
Editors of the special issue