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15th Hungarian geomathematical congress

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Tomislav Malvić, János Geiger and Marko Cvetković

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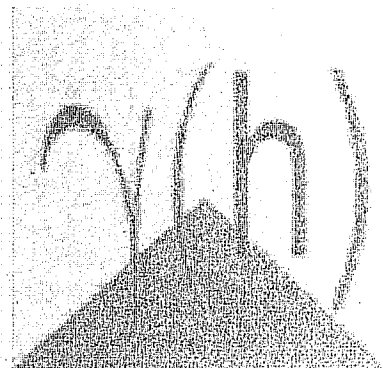


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FOREWORD

Dear readers,

The „Epilogue” of the „New Horizons in Central European Geomathematics, Geostatistics and Geoinformatics” published by GeoLitera in 2011 is closed by the following sentence: “ We hope, that this is only the beginning of a new series that will be followed by many others in the future.”. In fact, this hope has become reality, as it is demonstrated by this volume which is the proceedings of the 4th Hungarian Croatian and the 15th Hungarian Geomathematical Convent, hosted by the city of Opatija (Croatia).

Four years ago, in 2008, the Division of Geomathematics of the Croatian Geological Society agreed to organize joint meetings with its Hungarian counterpart. Since that time it has been a success story. The actual (4th joint convention) has a special importance, since this is the very first time, when this convent is organized outside of Hungary with the hospitality of the Croatian side.

This volume contains the full overview of 21 oral, 7 poster presentations along with the 5 lectures demonstrate the research activity of the members of IAMG Student Chapter, Szeged. The topics range from theoretical approaches through reservoir modeling and methods used in nuclear remediation as well as the most recent innovations of geoinformatical investigations. Authors listed range from employees of major oil industries of Croatia and Hungary (INA, Industrije Nafte, Croatia, MOL Hungarian Oil and Gas Public Limited Company), representatives of the Lybian Petroleum Institute, as well as Universities (University of Zagreb, University of Szeged, Eötvös Lóránd University of Budapest), National Geological Surveys, and the Eötvös Lóránd Geophysical Institute, Hungary.

Here, we special pointed out five very quality student’s submissions, which are presented in special part of the congress. These papers represent the

same quality level and have passed the same review process as all other submissions. However, as the researching on the doctoral studies include often more enthusiasm, risk and new ideas than "regular studies", the committee always considered important to offer students to present their work through special section and to be evaluated in a little bit different way but having in mind mentioned criteria.

In the 2012 we also tried to put more attention on three parts of geomathematics, considering it as the more expanding topic in the future geosciences' researching. Those were the usage of neural networks in geology, digital elevation models and theoretical developments. So, the authors of such papers were asked to give little more extended contribution than others, expecting that readers will be satisfied to find some more data on such topics.

We can hope, that this congress will not only help popularize the use of mathematical, and statistical approaches among geo-professionals of the region, will promote further fruitful collaboration, as well.

We hope to meet you the next year in Hungary.

In Zagreb and Szeged, May 2012

The Editors

Tomislav Malvić, János Geiger and Marko Cvetković

Complex examination of the effects of anthropogenic activity on wetlands

Gábor NAGY¹, András KIRÁLY¹, Tünde NYILAS², Lóránt Bíró²

¹SoilChem Agricultural and Environmental Laboratory, H-6782 Mórahalom, Vállalkozók útja 1/b., e-mail: gabor.nagy@sclab.hu

²Department of Mineralogy Geochemistry and Petrology, University of Szeged
H-6701 Szeged, PO Box: 651.

Abstract: Nowadays natural habitats are endangered because of human landscape-transformer processes and negative effects of climate change. Wetlands belong to the most vulnerable areas because low rate of anthropogenic effects can lead to significant and fast changes in these places. In the frame of the Hungary-Romania Cross-Border Co-operation Programme of the European Union we examined the dynamics of environmental processes and the anthropogenic effects in two watery habitats (a karst lake in Oradea, Romania and a saline lake near Mórahalom, Hungary). Paleoecological analysis, soil- and water-chemical measurements and geological examinations were carried out in the areas. The statistical analyses were based on the results of laboratory measurements and field studies. The presented examination is a part of a complex project that aims to classify ecological potential, to define the rate of degradation and to determine ecological function of the natural habitat.

Key words: wetland, factor analysis, environmental chemistry, karst lake, saline lake.