



ROMANIAN ASSOCIATION OF HYDROGEOLOGISTS (AHR)  
IAH Romanian National Chapter



*Proceedings of the  
2<sup>nd</sup> IAH Central European Groundwater Conference (2015)*

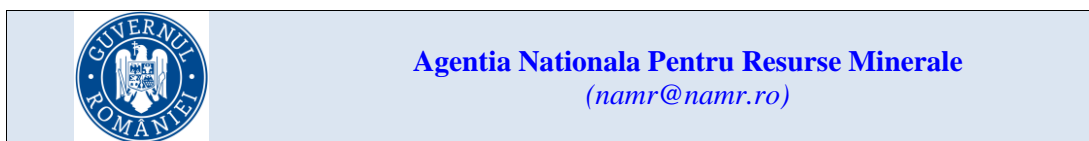
# **“GROUNDWATER RISK ASSESSMENT IN URBAN AREAS”**

**≈ Volume of papers and extended abstracts ≈**

Edited by  
Adrian Iurkiewicz and Iulian Popa

**Bucuresti, 2016**

Volumul de articole si rezumate extinse al Conferintei IAH-CEG 2015 a fost editat si tiparit  
cu sprijinul semnificativ al Agentiei Nationale pentru Resurse Minerale (ANRM)



The Volume of papers and extended abstracts of IAH - CEG 2015 has been edited and printed  
with the large support of the National Agency for Mineral Resources (NAMR)

\*

\*

\*

*The contents of the articles composing this volume are the exclusive responsibility of the authors  
and do not necessarily conform to the opinions of the editors or organizations to which they belong.*

**ISBN 978-973-0-22094-0**

**© Asociatia Hidrogeologilor din Romania (AHR)**

Str. Traian Vuia nr. 6, Bucuresti – 020956

<http://ahgr.ro>

**Bucuresti, 2016**

## Cuprins // Contents

<i>About this volume</i>	.....	1
<b>Groundwater research in the southern Suhard Mountains, Romania</b> <i>Valentin Boian, Gheorghe Witek, Marin Palcu, Iulian Popa, Daniel Scradeanu</i>	.....	7
<b>Research and promotion of ground coupled heat pump systems in towns and cities throughout Croatia</b> <i>Staša Borović, Kosta Urumović and Josip Terzić</i>	.....	12
<b>Abstraction and use of groundwater for heating buildings in a hard rock urban environment</b> <i>Antonio Chambel, Jorge Duque</i>	.....	19
<b>Climate impacts upon phreatic aquifers in Dobrogea</b> <i>Doina Drăgușin, Lăcrămioara Coarnă, Mihai Rădescu</i>	.....	24
<b>Contributii la cunoasterea apelor subterane din zona municipiului Drobeta Turnu Severin. (Contributions to knowledge of groundwater in Drobeta Turnu Severin municipality area)</b> <i>Constantin Enache, Maria Popescu, Constantin Cârlan</i>	.....	33
<b>Flash floods, sediments and groundwater aquifer regime at Ocna Mureș, Romania</b> <i>Dresmann Horst, Huggenberger Peter, Mocuța Marius, Popa Iulian</i>	.....	36
<b>Assessment of hydrogeological conditions and geothermal application in Sofia Municipality (Bulgaria)</b> <i>Hristov V, Benderev Al, Bojadgieva K</i>	.....	45
<b>Groundwater resources in Raciș-Piscu synclinorium from the southern slope of Bucegi mountains for urban systems of Ialomita Valley</b> <i>Alexandru Istrate</i>	.....	51
<b>A quantitative evaluation of climate change impact on shallow groundwater conditions in Hungary</b> <i>Attila Kovács, György Tóth, Teodóra Szócs, Annamária Marton, Tamás Kerékgyártó, Éva Kun</i>	.....	54
<b>Groundwater pollution with trichlorethylene in Pipera-Voluntari area, Ilfov county</b> <i>Dumitru Neagu, Teodora Vasile</i>	.....	58
<b>Groundwater dynamics from the Beius Basin basement and the surrounding mountain areas</b> <i>Orășeanu Iancu</i>	.....	63
<b>Date preliminare privind dinamica acviferului termal din zona Băile Felix-1 Mai, Bihor, Romania. (Preliminary data concerning the dynamics of the geothermal aquifer of Băile Felix – 1 Mai Spa, Bihor County, Romania)</b> <i>Orășeanu Iancu, Malancu Florian</i>	.....	81
<b>Application of hydraulic tests to minimize the risk of pollution in mining area. Case study - Ocnele Mari, Romania</b> <i>Marius Mocuța</i>	.....	

<b>Using analytical solution related to groundwater flow and the propagation of heat in the earth's crust to assess the impact on groundwater of geothermal exchange wells in Măgurele area, Ilfov District, Romania</b>	89
<i>Marin Palcu, Daniel Scrădeanu, Dumitru Neagu, Gheorghe Witeck, Dan Stoichiță, Mihaela Scrădeanu, Mihaela Alexandru</i>	
<b>The interference conditions assessment in north-western part of Timisoara Town, in case of operating the production wells with variable flow rates</b>	98
<i>Marin Palcu, Gheorghe Witek, Mihaela Alexandru</i>	
<b>Potable water supplying aquifers of Constanta harbour platform</b>	105
<i>Nicolae Pitu, Glicherie Caraivan, Corneliu Cerchia, Daniela Popescu, Irina Dinu</i>	
<b>Urban development and its implications over exploitation of groundwater aquifers Upper Jurassic-Lower Cretaceous. Case Study: Constanta Metropolitan Area</b>	118
<i>Nicolae Pitu, Alexandru Verioti</i>	
<b>King Oscar's Road - Urban Hydrological and Hydrogeological 3-D Modelling</b>	123
<i>Kim Rudolph-Lund, Kjetil Sandsbråten</i>	
<b>The impact of the geothermal heat pumps system in the area of Scientific Research Centre Extreme Light Infrastructure - Nuclear Physics (ELI-NP), Bucharest – Măgurele</b>	147
<i>Daniel Scrădeanu</i>	
<b>Dewatering efficiency and groundwater control in urban areas. Case study: Otopeni-Bucharest</b>	154
<i>Daniel Scrădeanu, Mihaela Scrădeanu</i>	
<b>Some problems of the interaction of the urban environment and the groundwater in the city of Sofia</b>	158
<i>Stoyanov N, Benderev AI, Petrov V, Ivanov I, Hristov VI.</i>	
<b>Sustainability of Szentes Geothermal Field operations</b>	173
<i>Janos Szanyi, András Bálint, Máté Osvald, Balázs Kovács, Imre Czinkota, János Nagygál</i>	
<b>Studiul prin izotopi de mediu al apelor subterane balneo-terapeutice de la Tușnad Băi, România. (Environmental isotopic study on balneotherapeutic groundwater from Băile Tușnad Spa, Romania)</b>	183
<i>Augustin Țenu, Daniel Scrădeanu, Iulian Popa, Attila David</i>	
<b>Investigation of urban aquifers based on environmental tracers</b>	199
<i>Trcek B., Leis A.</i>	
<b>Date noi privind modelul conceptual al hidrostructurii geotermale Oradea - Băile Felix &amp; 1 Mai. (Oradea – Băile Felix &amp; 1 May spas area: Some new data regarding conceptual model of geothermal hydrostructure)</b>	208
<i>Augustin Țenu</i>	