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Organization	Technical University of Civil Engineering Bucharest
Research Topic	Subsurface hydrology
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Dr Gogu is a senior researcher with experience in hydrogeology, urban hydrogeology, numerical modelling as well as spatial data analysis. His resume shows over 25 years of experience in groundwater modelling, groundwater vulnerability assessment, groundwater artificial recharge, geospatial databases design, and GIS-based geosciences modelling tools. This was achieved during different international projects, as working in different European countries: Switzerland, Belgium, Spain, Greece, and Romania. He is full professor and the head of the Groundwater Engineering Research Centre (CCIAS) at Technical University of Civil Engineering of Bucharest. Since 2011 he built up the Groundwater Engineering Research Centre ([www.ccias.utcb.ro](http://www.ccias.utcb.ro)). The CCIAS team develops applications within several contracts targeting both private and public sectors (FP7, EEA Grants, European Space Agency, Swiss National Funds, local authorities and others).

### Research Projects

(2016 – 2019) INXCES - INnovations for eXtreme Climatic Events, 2016-2020, , Technical University of Civil Engineering, Bucharest (Romania), WATER JOINT PROGRAMMING INITIATIVE – EU WATERWORKS

(2016) Framework for urban groundwater and shallow geothermal energy e-learning platform, Fund for Bilateral Relations of Programme RO01 - Technical Assistance and Fund for Bilateral Relations at National Level (EEA Grants)

(2016 – 2018) Aquifer intrinsic vulnerability mapping: experimentation and theoretical development in Romania, Wallonie –Bruxelles International Belgium and Romanian Academy of sciences

(2014 – 2016) Urban water and groundwater modelling, Bucharest city water operator

(2014 – 2015) Current trends and approaches in urban hydrogeology, Fund for Bilateral Relations of Programme RO01 – Technical Assistance and Fund for Bilateral Relations at National Level (EEA Grants)

(2014 – 2017) COST-TU1206- SUB-URBAN - A European network to improve understanding and use of the ground beneath our cities ([www.cost.eu/COST\\_Actions/tud/TU1206](http://www.cost.eu/COST_Actions/tud/TU1206)), EU – COST Action

(2014 – 2015) Hydrogeological model of Galati city (Urban hydrogeology studies: Groundwater – urban infrastructure ), Local Administration funds

(2014 – 2017) Remote sensing, model and in-situ data fusion for snowpack parameters and related hazards in a climate change perspective (SNOWBALL), SEE 2014-2017, <http://snowball.meteoromania.ro/>, EEA Grants (European Economic Area Financial Mechanism)

(2014 – 2015) Mobile laboratory for Brownfield sites investigation POSCCE-A2-O2.2.1-2013-1/ 1925; COD SMIS:49178, Romanian National Research Funds - POSCCE-A2-O2.2.1-2013-1

(2013 – 2015) Hydrogeological model of Bucharest city (Urban hydrogeology studies: Groundwater – urban infrastructure ), Bucharest city water operator

(2013 – 2016) GEOIDEA – Geodata Openness Initiative for Development and Economic Advancement in Romania ([www.geoidea.ro](http://www.geoidea.ro)), Swiss National Research Funds

(2013 – 2015) SYRIS - Integrated service for urban subsidence phenomena based on space-borne interferometric synthetic aperture radar (InSAR) and hydrogeological-geotechnical hybrid modeling ([www.ccias.ro/sirys/](http://www.ccias.ro/sirys/)), ESA (European Space Agency)

(2010 –2014) SIMPA - Sedimentary Media Modeling Platform For Groundwater Management In Urban Areas ([www.ccias.utcb.ro](http://www.ccias.utcb.ro)), Romanian National Research Funds

(2007 – 2010) ECAVAS - Prototype aquifer vulnerability maps for Romania, Romanian National Research Funds

(2007 - 2009) GEO – 3D – 3D geological model of the sedimentary media in the Barcelona region to predict the behaviour of the tunnelling machine excavating the Subway L9 line. (Barcelona City - Airport), FCC and Spanish National Research Funds

(2007 –2009) HEROES - 3D hydrogeological modelling tools in sedimentary media, Spanish National Research Funds

(2006 - 2008) TITOS - Techniques, technology and ontology for geospatial data and services portals, National Romanian Research Funds

(2006 –2008) SITAR - Integrated Information System for elaborating the Romanian Groundwater Atlas, National Romanian Research Funds

(2006 –2007) AQUAPROTECT - Sustaining Romanian research applied to groundwater vulnerability and protection at the European level ([www.aquaprotect.ro](http://www.aquaprotect.ro)), National Romanian Research Funds

(2006 – 2009) Developing and application of a groundwater modelling platform, Spanish National Research Funds

(2006 – 2009) GEOMODELS regroups several universities and public research organizations having the purpose of applying and developing new geosciences technologies (University of Barcelona, Technical University of Catalonia, IGME )- Spain, Spanish National Research Funds

(2006 – 2008) GABARDINE - *Groundwater Artificial recharge Based on Alternative sources of water: aDvanced INtegrated technologies and managEment* - Funded by EU - FP6

(2005 – 2007) INSPAM Spatial Data Infrastructures with Applications in Environment Protection, Romanian National Research Funds

(2003 –2005) HazNETH (Switzerland) - Geo-spatial system for natural hazard assessment studies in Switzerland, Swiss National Funds and ETH Zürich

(2003 –2004) ORCHESTRA (EU - Switzerland) - Open Architecture and Spatial Data Infrastructure for Risk Management, EU/FP 6

(2000 –2003) GEOWARN (EU - Switzerland) - *Geo-spatial warning systems, Nisyros volcano*, EU/ FP 5

(1999 –2000) Designing and producing the prototypes of the general hydrogeological maps for the Walloon region (Waremmes–Momalle and Modave-Clavier, scale 1:25,000), Department of Natural Resources and Environment, Walloon Region Administration (Belgium)

(1999) Aquifers vulnerability study based on GIS, Walloon Region, Belgium

(1998 –1999) Application of Geographical Information Systems to optimize the preparation of spatial data for groundwater modelling applied in Global Change scenarios- Belgian Office for Scientific, Technical and Cultural Affairs, Belgian Office for Scientific, Technical and Cultural Affairs, Belgium

(1998 –2003) COST-A620- *Vulnerability and risk mapping for the protection of carbonate (karst) aquifers* (EU – Belgium), EU – COST Action

(1997 – 1998) Groundwater Vulnerability Assessment in Romania, Using Geographical Information Systems, Research Support Scheme of the Open Society Institute /Higher Education Support Program, Prague, Czech Republic

(1994 – 1998) MSc/ Postgraduate School of Geographical Information Systems (2 years) within the international academic network UNIGIS ([www.unigis.org](http://www.unigis.org)), Soros Foundation for an Open Society, Romania

(1993 – 1996) TEMPUS DEA Water and Environment Science, EU - TEMPUS Program

#### Selected Publications

- ***Resilient cities and groundwater*** Foster S, Tyson G, Howard K, Hirata R, Shivakoti BJJ, Warner K, **Gogu R**, Nkhuwa D, Strategic Overview Series – International Association of Hydrogeologists, IAH 2015, COP-21 Megacities Conference Groundwater Session, Paris, December 2015

- ***A hydrogeological conceptual approach to study urban groundwater flow in Bucharest city, Romania***, Boukhemacha M A, **Gogu C R**, Serpescu I, Gaitanaru D, Bica I. *Hydrogeology Journal*, vol 23, no 3, 437–450 pp, January 2015, DOI: 10.1007/s10040-014-1220-3

- ***General aspects on urban hydrogeology and highlights from Bucharest (Romania)***, Boukhemacha MA, **Gogu CR**, Serpescu I, Gaitanaru D, Bica I. *Environmental Engineering and Management Journal*, vol.14, no 6, 1279-1285 pp, June 2015, ISSN: 1582-9596

- ***Urban groundwater modeling scenarios to simulate Bucharest city lake disturbance*** , **Gogu C R**, Serpescu I, Perju S, Gaitanaru D, Bica I. *15th International Multidisciplinary Scientific GeoConference SGEM 2015, Conference Proceedings*, June 18-24, 2015, Book1 Vol. 2, 834-840 pp, ISBN 978-619-7105-32-2 / ISSN 1314-2704

- **3D geological model to support the management of urban subsurface environment: Bucharest City case study**, Serpescu I, **Gogu C R**, Boukhemacha M A, Gaitanaru D, *8th European Congress on Regional Geoscientific Cartography and Information Systems (EUREGEO)*, June 2015, Barcelona, ISBN 978-84-393-929-7.
- **GIS-based hydrogeochemical analysis tools (QUIMET)**, Velasco V, Tubau I, Vázquez-Suñe E, **Gogu C R**, Gaitanaru D, Alcaraz M, Serrano-Juan A, Fernández-García D, Garrido T, Fraile J, Sanchez-Vila X. *Computers & Geosciences*, Elsevier, DOI: 10.1016/j.cageo.2014.04.013
- **DRISTPI, a new groundwater vulnerability mapping method for use in karstic and non-karstic aquifers**, Jiménez-Madrid A, Carrasco F, Martínez C, **Gogu C R**. *Quarterly Journal of Engineering Geology and Hydrogeology*, UK, Online First 2013, v. 46/2, pp. 245-255, DOI: 10.1144/qjgegh2012-038
- **Numerical study on temporal domain discretizing for hydrogeological modeling practices**, Boukhemacha M A, **Gogu C R**, Bica I, *Mathematical Modelling in Civil Engineering*, v. 2, pp. 27-41, ISSN (Print) 2066-6934, DOI: 10.2478/mmce-2013-0003, April 2013
- **Groundwater and Urbanism**, **Gogu C R**, Boukhemacha M A, Gaitanaru D, Serpescu I, Brusten A, Bica I. *5th edition of the research conference in constructions, economy of buildings, architecture, urbanism and territorial development*, Bucharest, Romania, 2013, ISSN 2343-7537.
- **Hydraulic characterizing of tunnels barrier's effect for groundwater flow modeling - Application for Bucharest City**, Boukhemacha M A , **Gogu C R**, Serpescu I, Gaitanaru D, Bica I, Diaconescu A, Brusten A. *13th International Multidisciplinary Scientific GeoConferences - SGEM*, Conference Proceedings, Vol. 2, pp 179 – 186, 2013, Albena, Bulgaria, ISBN 978-954-91818-8-3 / ISSN 1314-2704.
- **Numerical Parametrical Study on the Barrier Effect in Unconfined Aquifers**. Brusten A, Boukhemacha M A, **Gogu C R**, Bica I, Gaitanaru D. *13th International Multidisciplinary Scientific Geoconference - SGEM*, Conference Proceedings volume II, pp. 287-294, 2013, Albena, Bulgaria, ISBN – 978-954-91818-8-3, ISSN 1314-2704, DOI: 10.5593/sgem2013/BA1.V2/S02.001.
- **3D geological model of Bucharest city quaternary deposits**, Serpescu I, Radu E, **Gogu C R**, Boukhemacha M A, Gaitanaru D, Bica I. *13th International Multidisciplinary Scientific Geoconference SGEM*, Conference Proceedings volume II, pp. 1-8, 2013, Albena, Bulgaria, ISBN – 978-954-91818-8-3, ISSN 1314-2704, DOI: 10.5593/sgem2013/BA1.V2/S02.001.
- **Flow modelling aspects of urban hydrogeological systems**. Boukhemacha M A, **Gogu C R**, Bica I, *Mathematical Modelling in Civil Engineering*, v. 9/1, pp. 5-17, ISSN (Print) 2066-6934, DOI: 10.2478/mmce-2013-0003, June 2012
- **The use of GIS-based 3D geological tools to improve hydrogeological models of sedimentary media in an urban environment**, Velasco V, **Gogu C R**, Vazquez-Sune E, Garriga A, Ramos E, Riera J, Alcaraz M. *Environmental Earth Sciences*, Springer-Verlag, , v 88/8, pp 2145–2162, August 2012, DOI: 10.1007/s12665-012-1898-2
- **A New Spatial Multi-Criteria Decision Support Tool for Site Selection for Implementation of Managed Aquifer Recharge**, Rahman, M A, Rusteberg B, **Gogu C R**, Lobo Ferreira J P, Sauter M. *Journal of*

*Environmental management*, Elsevier, v 99, pp 61–75, 30 May 2012, DOI: 10.1016/j.jenvman.2012.01.003

- ***Sedimentary media analysis platform for groundwater modeling in urban areas***, Gogu C R, Velasco V, Vasquez E, Gaitanaru D, Chitu Z, Bica I. *Advances in the Research of Aquatic Environment*, Vol 2, pp 489-496, Springer Verlag, Berlin, 2011, ISBN -978-3-642-24076-8, DOI: 10.1007/978-3-642-24076-8

- ***Improving groundwater modeling of sedimentary media using GIS based 3D geological tools***, Velasco V, Gogu C R, Garriga A, Monfort D, Vazquez-Suñé E, Ramos E, Carrera J, 11-14 October 2010, *Congress GeoDarmstadt 2010*, Darmstadt, Germany.