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FACULTY OF LAND RECLAMATION  
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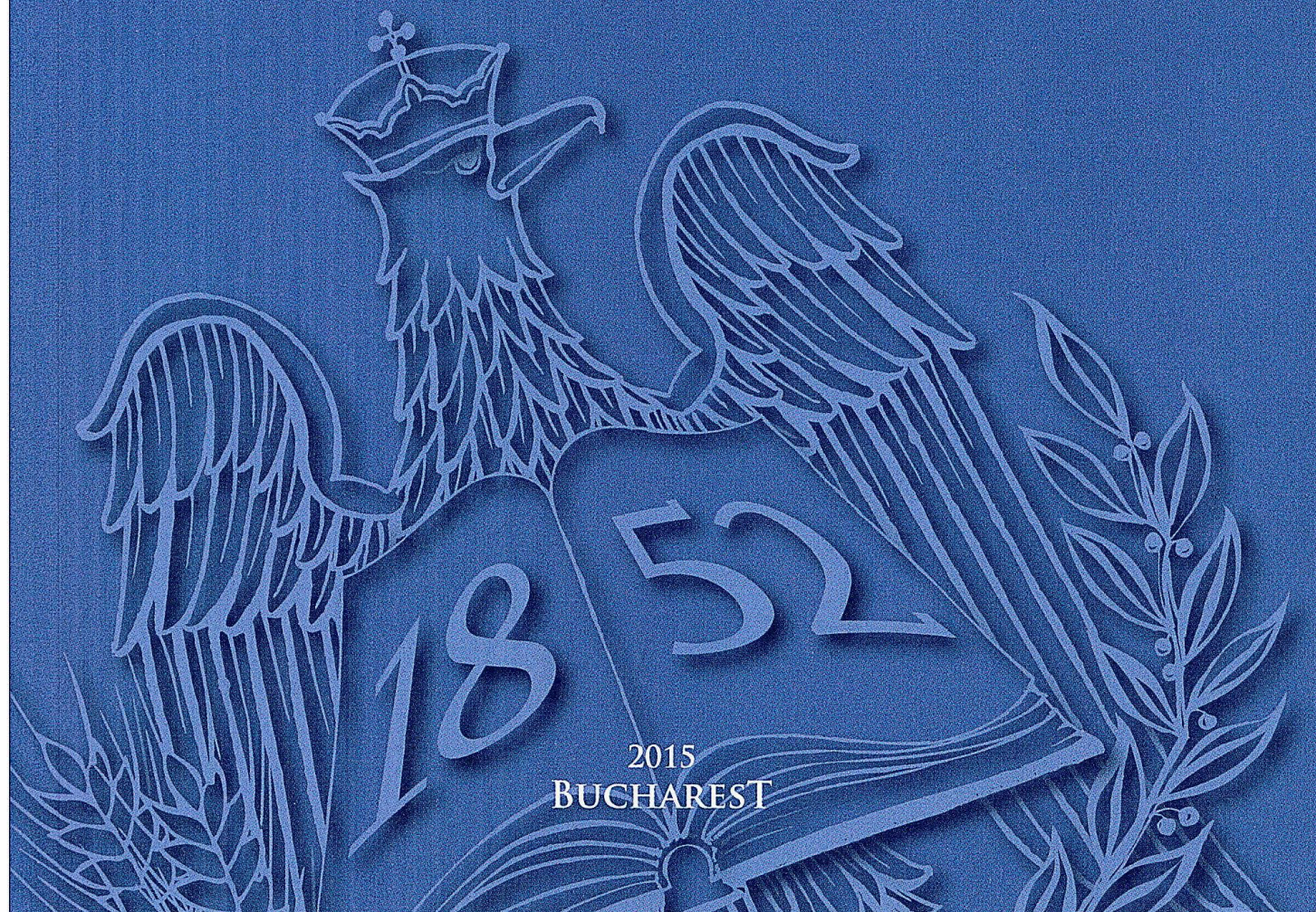


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# BOOK OF ABSTRACTS

## SECTION 5

LAND RECLAMATION, EARTH OBSERVATION &  
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**GEOSTATISTICS TAILORED TO ADDRESS  
NITRATES SPATIAL UNCERTAINTY IN  
GROUNDWATER (DOURO WATERSHED, SPAIN)**

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**Abstract**

*The management of water resources is a priority for development of the places and welfare of people that supply, especially in water bodies affected by antropic pressures. Moreover, the increasing of sudden and extreme climatic phenomena, appearance necessitates resource planning in specific situations. In this research, the evolution of the piezometric surface has been simulated, as the basis of a flow model draft, in the karstic aquifer of Paramo de Cuellar, located in the Douro watershed, along a hydrological year.*

*The use of geostatistical tools has been the starting point for estimating the piezometric surfaces, based on the median values for the years 2010-2012. From the point of view of planning, two scenarios that show extreme situations have been simulated: one of them parts of the most favorable conditions, in which piezometric level is at the highest median levels recorded (wet scenario); and the other one part of the toughest conditions, with the lowest median piezometric level recorded (dry scenario). It has likewise got a comparison about the geometry of the moor influences in the water flow from the aquifer, and the nitrate concentrations surface has been estimated.*

**Key words:** karstic aquifer, piezometric level, sequential Gaussian simulation, spatial uncertainty, ordinary kriging