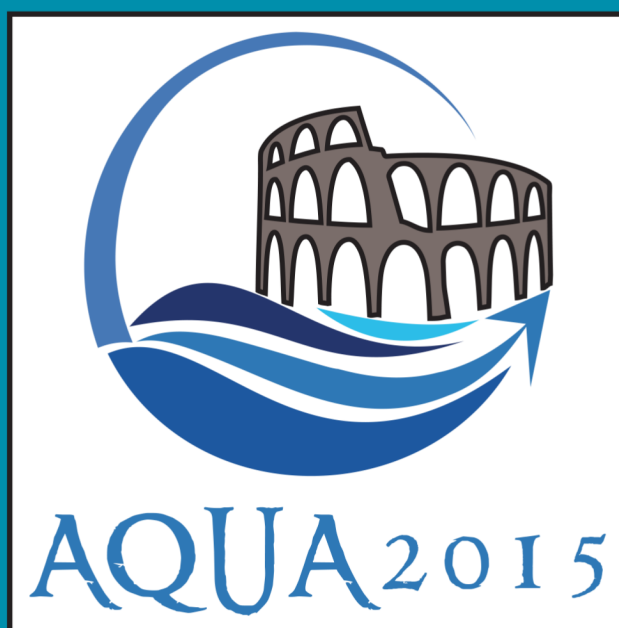


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**ABSTRACT BOOK**

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## **Interaction between pollution of an aquifer by a chemical fertilizer plant, and integrity of underground constructions**

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The durability of concrete structures has now become an important point, including in the normative building approach, not least because the repairs have a significant cost. In the United States alone it is estimated that the cost of repairing concrete structures damaged by corrosion of concrete reinforcing steel are 16 to 24 billion with an annual increase of 400 million dollars. The groundwater pollution from industrial origin is mainly due to the poor management of industrial activity sites, thereby promoting infiltration of the chemical from the surface of soil towards the groundwater. This study was conducted to evaluate the spatio-temporal distribution of a pollution based chloride and sulphate, very aggressive chemicals elements overlooked of the concrete, and triggers steel corrosion. These chemicals elements constituting the residues of the activity of a chemical fertilizer production plant located in the city of Annaba in Algeria. First, our study has demonstrated the presence of these elements in the collected samples, and this in different degree of concentrations. Subsequently, these data were used to simulate and predict the spread of underground pollution, towards the foundations of a important overpass, which is close to this chemical plant.