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**Meeting Paper**



**Advanced Geometrical Modelling of  
Salt Dissolution during Cavern Leaching  
Illustration with a Case Study**

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*by*

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## **Abstract**

Gaz de France uses the INVDIR code to simulate the leaching of salt caverns, used in underground gas storage. This code was subjected to changes in 1998 : a new approach was implemented to improve the simulation of the cavern geometrical evolution during leaching.

The general principle of the modification consists in improvements on the processing of the areas where the inclination of cavern wall changes abruptly in order to obtain a smoother shape.

These improvements are illustrated by the comparison of the old and the new version of INVDIR simulations applied to two test shapes chosen for their typical geometrical perturbation. The comparison shows that the new version gives more accurate shapes without geometrical instabilities.

Simulations of a real case study was applied to the cavity EZ 12 from the underground gas storage Etrez (France). This real case study shows that both versions are able to make continuous leaching simulations with no interruption between leaching stages. The simulation results compared to the sonar measurements confirm the tests simulations conclusions.

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