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New approaches to the modeling of salt leaching processes in a flooded potash shaft

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Abstract

The paper is related to the project *Analysis, Modeling und Simulation of recent Subrosion in a flooded Potash Shaft*, which is directed by Univ.-Prof. Dr.-Ing. W. Busch and is part of a research collaboration, supported by German Research Foundation (DFG). The project was introduced for the first time at the SMRI-Meeting in Albuquerque by the same author. Since the beginning of 2002 the research staff is completed and the most methods and techniques are determined. The project runs till 12/2003 at least. The paper gives a short summary of the mining subsidence and damages due to mining within the former Stassfurt potash mining region in Germany and describes the necessity of a model representing the relatively unknown leaching processes within the flooded shaft and the effects of possible geotechnical measurements. The main modules of the project are presented generally. These are the data-base management system, the object-oriented process model and the visualization based on volume-NURBS (non-uniform rational B-splines). A particular view is set on the technical description of the leaching processes, respecting the geochemical and geometrical conditions as well as solution restricting influences.