



## **Processes and controls in swelling anhydritic clay rocks**

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Referring to the swelling of anhydritic clay rocks in tunneling, Leopold Müller-Salzburg noted in the third volume on tunneling of his fundamental text book on rock engineering that “a truly coherent explanation of these phenomena is still owing” (Müller-Salzburg 1978, p. 306). This valuation is still true after more than three decades of research in the field of swelling anhydritic clay rocks. One of the reasons is our limited knowledge of the processes involved in the swelling of such rocks, and of the geological, mineralogical, hydraulic, chemical and mechanical controls of the swelling. In this contribution, a review of processes in swelling anhydritic clay rocks and of associated controls is presented. Also numerical models that aim at simulating the swelling processes and controls are included in this review, and some of the remaining open questions are pointed out. By focusing on process-oriented work in this review, the presentation intends to stimulate further research across disciplines in the field of swelling anhydritic clay rocks to finally get a step further in managing the swelling problem in geotechnical engineering projects.

Keywords: swelling; anhydritic clay rocks; review