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## **Creep Analysis of Rock Salt Convergence from Deep Shaft Multipoint Extensometer Data**

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### **Abstract**

This paper revisits published data from a deep shaft case study where multipoint borehole extensometers were used to monitor the long-term radial convergence of a 8m diameter shaft passing through halite deposits at a depth of 1056m. Measurements of deformation at anchors located at 0.6m, 1.5m, 3.0m and 4.5m depths into the shaft wall were recorded at various orientations for a period of about 7 years. This dataset provides unique insights into the behaviour of deep shafts sunk within rock salt formations, such as in the case of deep mine shafts or accessways for a geological disposal facility. A back-analysis is presented using analytical solutions and numerical modelling. Creep properties obtained from small-scale laboratory tests are also examined to investigate potential correlations with the in-situ salt behaviour.

**Key words:** rock salt, shaft sinking, creep convergence, multipoint extensometer

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