

Subsidence Above Cavities - Theoretical Principles and Practical Experience

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ABSTRACT:

Cavities formed in salt domes converge over time and as a result cause subsidence troughs to be formed at the surface. The form and development of these subsidence troughs depend on various parameters, such as the cavity shape and size, the rate of convergence as well as the operating conditions.

First of all to elucidate subsidence behaviour, the observation results are presented of two cavity fields above which the surface elevations have been regularly measured over a period of more than 20 years. On the basis of this vast amount of data, a detailed interpretation of the observed subsidence behaviour is made and moreover analyses are performed based on convergence rates and speeds of subsidence.

Finally the theoretical principles are explained for calculating the expected subsidence over cavity fields and, by referring to a real-life example, the predicted future development of a subsidence trough is estimated.

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