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Paper



The Influence of Physical Conditions Inside a Cavern on Execution and Evaluation of Sonar Surveys

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Titel:

The influence of physical conditions inside a cavern on execution and evaluation of sonar surveys

Abstract:

The physical conditions inside a cavern have to be determined and considered on principle for every sonar survey. In case of non-observance or only rough assessment of these parameters, particularly in regard to speed-of-sound and temperature, erroneous results could be the consequence.

The propagation velocity of the ultrasonic signal is primarily dependent on the medium in the cavern and on the temperature and pressure conditions during the sonar survey. These conditions are again influenced by the cavern operations. Therefore it is very important to consider the foregone operational activities, because they may lead to temporarily inhomogeneous conditions inside a cavern.

With this paper the influence and relevance of the prevailing physical conditions for reliable results will be elucidated for sonar surveys in brine, oil, product and gas by means of practical examples.