

SOLUTION MINING RESEARCH INSTITUTE

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**Meeting
Paper**



Techniques and Practical Use of the New Tool Generation for the Echometric Surveillance of Caverns

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1 INTRODUCTION

The echometric surveillance of cavities is especially important with regards to safe and effective operations. In brine production cavities the main purpose of surveying is to monitor the progress of cavity development, whereas in storage cavities it is primarily used for proving cavity stability.

As opposed to other sonar systems, which all work in automatic mode, SOCON, with 30 years of experience in this field, has developed a special technique, the high-quality mode (HQ mode), that allows the operator or interpreter to optimally control the entire procedure. An optimum adjustment of the system to the prevailing conditions, starting at controlling the level of the emitted signal right up to the interpretation of the recorded echos, enables high quality results and reliable information to be obtained. The gross errors and accuracy losses which are inherent in automatic methods can be avoided by applying this special technique.

The new BSE tool generation can be used not only with the HQ mode, but also in automatic surveying mode for situations which do not require such high accuracy. Automatic measurement, however, can be recommended only in uncased cavities.

Application of SOCON's modern tool technology enables to record horizontal sections as well as diverse detailed measurements. This allows considerably more accurate and detailed information to be acquired about the cavity shape than is possible using techniques based solely on the measurement of horizontal sections.