

**FIBRE OPTIC MEASUREMENT SYSTEM FOR THE AUTOMATIC AND  
CONTINUOUS BLANKET LEVEL INTERFACE MONITORING DURING THE  
SOLUTION-MINING PROCESS OF SALT CAVERNS.**

Jan-Owe Brentle and Christian Möbius

GESO GmbH Jena

Henning Moyer and Steffen Wöpe

esco GmbH & Co.KG

**Abstract**

GESO GmbH Jena has now been operating successfully for more than 22 years in the fields of fibre optical temperature and strain measurement and works in a wide field of applications.

To guarantee the stability, the shape and the production continuity of salt caverns the knowledge about the level of the blanket interface (blanket: oil or nitrogen) for the control of the process is of great importance. For this reason the GESO GmbH Jena has been developing a fibre optic measurement system for the automatic and continuous blanket level interface monitoring during the solution-mining process of salt caverns in close cooperation with the company esco GmbH & Co.KG since 2007 and it has proved successful.

The paper will present the measurement system. The requirements that have to be realised regarding the hard- and software will be shown and the advantages of the measurement system for the customer/user will be exemplified.

By using case examples the main developments on the way to the finished system will be illustrated. Because of the ongoing development of the system relating to the hard- and software, and the experiences drawn from the long practical experience in the salt caverns of esco it is now possible to install and to use the measuring system in other areas. In a conclusion the user of the system esco GmbH & Co.KG and the system developer GESO will give a forecast regarding further enhanced operator convenience and accuracy, for example further refinement of the spatial resolution of 0.5 m.

**Keywords:** Fibre Optical Measurement, Blanket Brine Interface Monitoring, Fluid Mining