

Overview of marine EM and ERT methods for offshore freshened groundwater exploration

K. Schwalenberg¹, X. Garcia² and P. Tarits³

¹BGR- Federal Institute for Geosciences and Natural Resources, Hannover, Germany;
katrin.schwalenberg@bgr.de

²CSIC - Institut de Ciències del Mar, Barcelona, Spain

³IUEM – Institut Universitaire Européen de la Mer, Plouzane, France

SUMMARY

The exploration of offshore freshened groundwater (OFG) bodies has become an emerging field for marine CSEM and ERT methods. As part of the European Cooperation in Science and Technology (COST) Action OFF-SOURCE, we are in the process of collecting and evaluating available information on marine EM and ERT instrumentation and analysis tools, in addition to published case studies, to convey an overview of what is available to the scientific community and potential stakeholders. Based on this exercise we will be able to identify open tasks, challenges and improvement needs to bring EM methods to the forefront of OFG exploration.

As a starting point, we have created a list of contacts, technical specifications and basic descriptions that we have drawn from literature and personal communications. To date, our list contains twelve entries for marine CSEM systems and five entries for ERT systems used at sea, with emphasis on coastal areas. With our presentation, we are reaching out to the (marine) EM community for further input and suggestions to improve operational and scientific aspects of OFG exploration.

Keywords: marine CSEM, ERT, offshore freshened groundwater exploration, marine EM instrumentation
