

IEA-GIA Common Fund Support for a Sustainability Session on Reservoir Modelling at the 53rd SIMS Conference in Reykjavik, October 2012

In June 2012 the IEA-GIA accepted a proposal to reimburse travel and accommodation expenses of a few participants to be invited to participate in the 53rd SIMS Conference to be held in Iceland in October 2012. The participants were to present papers on long-term reservoir modelling of geothermal systems within a session dedicated to sustainability modelling, which is an issue the IEA-GIA has been focusing on in recent years. The total support was not to exceed 10,000 USD.

The SIMS conference was the 53rd international conference of the Scandinavian Simulation Society (<http://www.scansims.org/>). It was held in Reykjavik, Iceland, October 4 – 6, 2012. It included two days of presentations and a one-day geothermal field trip.

Gudni Axelsson, who is the leader of Task I (Sustainable Utilization) under Annex I of the IEA-GIA, coordinated the activity. This involved inviting participants, soliciting and reviewing their contributions as well as arranging their air travel and accommodation in Iceland.

Invitations were sent out to a few of the corresponding authors of papers in the Geothermics Sustainability Issue from 2010, which was supported by the IEA-GIA. Two of these responded positively, Simon Lopez from France and Manuel Monterrosa from El Salvador. In addition the participation of an expert in geothermal reservoir modelling from the USA, Robert Podgorney, was also supported. The presentations of the first two were given in Session 5 of the conference, which included the following:

Session 5 - IEA-GIA work on Sustainable use of Geothermal Resources

Modelling sustainable geothermal utilization

Gudni Axelsson

Optimal and sustainable use of the Dogger aquifer geothermal resource: long-term management and new technologies

Simon Lopez, Hamm Virginie and Olivier Goyeneche

Sustainability analysis of the Berlin geothermal field, El Salvador

Manuel Monterrosa

Robert Podgorney's paper was presented during the first session of the conference:

A Globally-Implicit Computational Framework for Physics-Based Simulation of Coupled Thermal-Hydro-Mechanical Problems: Application to Geothermal Reservoirs

Robert Podgorney, Hai Huang, Chuan Lu and Derek Gaston

In addition to these papers, supported by the IEA-GIA, several other relevant geothermal modelling presentations were given at the SIMS Conference, including:

Temperature Condition Modelling for well IDDP-1 in Krafla, N-Iceland

Gudni Axelsson, Thorsteinn Egilson and Sigrídur S. Gylfadóttir

Boundary conditions and heat sources in geothermal reservoir modelling

Gunnar Gunnarsson and Edda S. P. Aradóttir

Modeling Fluid and Energy Flow in Liquid Dominated Hydrothermal Systems

Lárus Thorvaldsson and Halldór Pálsson

A coupled wellbore-reservoir simulator utilizing measured wellhead conditions

Halldóra Gudmundsdóttir, Magnús Thór Jónsson and Halldór Pálsson

Papers associated with the presentations given at the 53rd SIMS Conference can all be found at <http://www.os.is/gogn/Skyrslur/OS-2012/OS-2012-06.pdf>.

The modelling papers supported by the IEA-GIA will be edited further and consequently made available through the member's area of the GIA web-page, along with the two papers presented by Axelsson and Axelsson *et al.* The plan is also to present and discuss these at the next Annex I meeting in the spring of 2013.

Reykjavík, October 19st 2012

Gudni Axelsson