

MINUTES – DEEP EARTH SECTOR 20 March 2018, 09:15 – 10:30

Attendees: Niels Balling, Ole R. Clausen, Hamed Sanei, Eric Brown, Graham Adrian Hagen-Peter, Thorsten Nagel, Kenni Dinesen Petersen, Kenneth Bredesen & Thomas Nielsen

Niels started with an introduction to the DanSeis seismic infrastructure set-up (<http://danseis.dk/>). It is a collaboration between Geoscience, Copenhagen University & Geoscience Aarhus University and GEUS. It has 20-million DKK state-of-the-art pool of seismometers for land and oceans.

Niels informed about the DanSeis-testing project in Southern Scandinavia (*South Scandinavian Array*) he is running with about 40 temporary stations in southern Norway, southern Sweden and in Denmark including 5 OBSes in the Skagerrak. The project is in cooperation with GEUS, Uppsala and Oslo University and the testing part ends in August 2018. All data will be freely available for everybody after 2 years in DanSeis.

Niels is looking for further manpower to analyse the data from the project.

Hamed told us about his set-up at the department. He is the Maersk-oil chair. He is to develop a petroleum research program in collaboration with colleagues at GEO and DHRTC. Currently he is developing a lab for organic petrology and geochemistry (e.g. pyrolysis system & organic petrology microscope). The lab will give us in-house capacity to determine thermal maturity on e.g. dolomites (based on optical properties). A number of PhDs and Post Docs are coming. He is looking to recruit foreign students with funded scholarships (e.g. China Scholarship Council).

HAMED is developing collaboration with China University of Petroleum (Department of Geoscience – 300 permanent scientific staff and 900 PhDs!). CUP is looking to submit a project proposal on *Deep Earth Basin* (Geophysics, Geothermal, unconventional exploration ...). The proposal is for millions of USD under the 1+1+1 initiative in China. The proposed project that CUP is putting forward will focus on the area of fundamental theory and technology of deep petroleum geology or geofluid and petroleum accumulation in deep basin. Prof. Steve Larter from Canada (Royal Society) and Hamed are so far formally invited to join this project. Hamed have been asked to introduce one or two senior Professor from GEO and Søren Bom Nielsen has been introduced to them. The proposal deadline is in September and for that, China University of Petroleum needs a formal agreement with AU. 1+1+1 is formally called *Program of Introducing Talents of Discipline to Universities* or “111” Project. This project has been jointly implemented by the Ministry of Education and the State Bureau of Foreign Experts of the People's Republic of China since 2006. It is a close integration program of project, talent and research base (or *111 intelligence base*). <http://www.chinahighereducation.org/2017/09/13/chinas-111-project-building-world-class-rd-universities/>

The program aims at the frontier of international subject development and brings in excellent talents from top 100 universities and research institutes around the world. 10 overseas notable professors/researchers, including at least one academic master and 5

notable academic key member, and not minimum 10 domestic scientific research backbone are included in this project.

Ole, together with other staff members, is having a DHRTC grant for enhanced oil recovery & a smaller project focussing on Structural mapping based on 3D seismic. It will involve a PhD and a Post Doc.

Ole is applying (with Katrine) for an EU InterReg project (with University of Bremen as lead). The project is to map shipwrecks in the North Sea from WW1 and WW2. They are starting to be an environmental hazard (un-exploded grenades on the wrecks).

Ole mentioned the Danish Navy new Ship P572 Lauge Koch. It is an inspection ship for Greenland in the Knud Rasmussen Class ([https://da.wikipedia.org/wiki/Knud_Rasmussen-
klassen](https://da.wikipedia.org/wiki/Knud_Rasmussen-klassen)). To get funding through parliament they had to equip the ship as a research vessel and it has to operate as a research vessel for several months per year. Ship-time is free (salaries and equipment has to be covered). Applications for ship-time has to be submitted to "Dansk Center for Havforskning" as they manage it: <http://www.danskhavforskning.net/>

Ole also brought the attention to the DHRTC Radical Innovation Sprint: <http://www.oilgas.dtu.dk/english/Ideation/Radical-Innovation-Sprint>

Thorsten has an FNU project *Chemical Flux UHP melanges* with field study in Europe. It ends Summer 2018.

Thorsten has an AUFF funded PhD that he shares with Kenni looking on large-scale mantel convection processes.

Thorsten has a number of small projects on mountain building several places in the Alps and Greenland.

Thorsten is submitting a Villum Experiment application 21st March.

FUTURE MEETINGS

Short presentation:

Scientific presentation on recent results

Presenting ideas at an immature stage for feed-back from the group

/Thomas N