Topic-Workshop

Oberpfaffenhofen, May 07-08, 2018
Vorstandsgebäude 124 (Nr. 211; 2. Etage)

Big Data & Polar Research

Host: DLR/HR Oberpfaffenhofen

Münchener Straße 20
82234 Weßling

Aims & scope of the workshop

"Big Data" is a growing field in all science disciplines. It poses specific challenges in various aspects from data acquisition, management, and handling, but also from data mining, operational processing to educational aspects. Individual researchers, university institutions and large research institutions have or may have different perspectives and experiences on and with these challenges. The status of preparedness and contact to big data may be quite different depending on discipline and view. This cross-cutting topic has a strong potential for interdisciplinary work and requires collaboration between application and IT-technology.

With this topic workshop we would like to facilitate a platform to start exchanging on this current and future challenge in the various fields of polar research. We would like to compile an overview on the current status of big data: what is the current role of big data in the various science domains? What are the current developments? How are researchers and institutions prepared or currently preparing for this? Where are missing links? What has to be done in order to provide an improved preparedness (e.g. specific trainings, student education)?

The workshop will address earth observation, data assimilation and modelling. New mission concepts are addressed as examples as will be current cloud processing facilities. We will raise issues like capacities for sustainable data archiving, re-analysis/re-processing capabilities, integration of in-situ observations, dialogues between application and IT-experts.

Short keynotes will highlight the challenges and future developments in the different science fields and provide incentives for break-out group discussions. We ask participants to provide input to the breakout groups from their experiences from e.g. existing sensor networks and projects, from their specific thematic domain, strategic needs and perspectives. We do not intend a training workshop on how to handle big data!

Besides individual stimulation of new ideas and collaborations we aim at a status report on current preparedness of German polar research in the "Big Data" era. We want to show existing positive examples of large-scale data processing, sensor networks, identify demands, needs and missing links that currently hamper a specific research, group or entire discipline to dig deeper in the data jungle.

Agenda

12:30	Lunch / snack

13:30 Introduction, status quo (Matthias Braun, Boris Koch)
Logistics, concept and idea of the workshop
What means "Big data" for us (different scales and observations)

13:50 Developments in earth observation as well as requirements and needs from the view of ice dynamic modeling (Humbert, AWI; Braun, FAU)

14:20 CODE-DE & DIAS (national and European platforms for processing of Sentinel Mission data) (Hoffmann, DLR Raumfahrtagentur, t.b.c.)

14:40 Experience with large and NRT data processing (DLR-DFD, t.b.c.)

15:00 The TanDEM-L mission concept (DLR-HR)

15:20 Wrap-up and aims of break-out groups (Braun, Koch)

15:40	Coffee break

16:00 Break-out groups

17:15 Report of break-out groups

17:30 Wrap-up and directions

18:00	Dinner

Tuesday, 08/MAY/2018

09:00   Intro

09:10   Large scale image and sequence data management in biodiversity research (Beszteri AWI)

09:30   Big data experiences and challenges from the view of a computing center (Stefan Pinkernell: Rechenzentrum AWI)

09:50   From Excel to warehousing: data evolution in chemical oceanography (Koch: AWI)

10:10   Keynote on data mining techniques (t.b.c.)

10:30   Wrap-up and working tasks for the different working groups

10:45   Coffee break

11:00   Split-up in working groups

12:30   Short presentations of working group results

13:00   Final discussion and wrap-up: next steps; identification of lead author; feedback to workshops; closing

13:30   Lunch