Division Meeting
Cryospheric Sciences (CR)

Room Y1, Thursday 1 May 2014, 12:15-13:00
Agenda

- Meeting statistics
- CR officers and secretaries, medal committee,
- Medals and awards
- Publications: The Cryosphere
- General discussion
EGU General Assembly 2014 Facts

As of 26 April, the Assembly 2014 provides:

- 14,895 Papers in Programme | +11.6% (2013)
- 4,829 Orals | 9,583 Posters | 483 PICOs | Ratio 32 / 64 / 3
- 568 unique scientific Sessions | 126 PSD Sessions | 245 Side Events*
- 10,261 Registrations in Advance (10,176 already paid) | +3.9% (2013)
Abstracts in Programme 2005 - 2014
Presentation Ratio 2005 - 2014

<table>
<thead>
<tr>
<th>Year</th>
<th>PICOs</th>
<th>Posters</th>
<th>Orals</th>
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<tbody>
<tr>
<td>2005</td>
<td>65</td>
<td>61</td>
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<td>2006</td>
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<tr>
<td>2014</td>
<td>64</td>
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Participants at EGU Assemblies 2005-2013
CR Statistics

- 2014: 538 abstracts and 26 oral blocks / 2 PICOs
  (398 abstracts in 20 CR sessions: 21 oral blocks)
- 2013: 551 abstracts and 30 oral blocks
- 2012: 458 abstracts and 24 oral blocks
- 2011: 454 abstracts and 23 oral blocks
- 2010: 387 abstracts and 19 oral blocks.
Division Structure

Officers

President: Jürg Schweizer (2013-2015)
Vice President: Olaf Eisen: (2013-2015)
Medal committee: Dorthe Dahl-Jensen (2014- )
PC Chair: Jürg Schweizer (2013-2015)
OSP Award Coordinator: Willem Jan van de Berg (2014- )
Young Scientist Rep.: Nanna B. Karlsson (2014- )
EGU Journals: Jonathan L. Bamber
Outreach: Olaf Eisen (2014- )
#### Division Structure

<table>
<thead>
<tr>
<th>Secretaries</th>
<th>Name</th>
<th>Period</th>
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<tr>
<td>Sea Ice:</td>
<td>Daniel Feltham</td>
<td>(2012-     )</td>
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<tr>
<td>Permafrost:</td>
<td>Michael Krautblatter</td>
<td>(2011-     )</td>
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<tr>
<td>Glaciers:</td>
<td>Matthias Huss</td>
<td>(2014-     )</td>
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<td>Ice Sheets:</td>
<td>Guðfinna Th. Aðalgeirsdóttir</td>
<td>(2014-     )</td>
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<td>Ice Caps:</td>
<td>Nick Barrand</td>
<td>(2014-     )</td>
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<td>Ice Shelves:</td>
<td>Adrian Jenkins</td>
<td>(2014-     )</td>
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<tr>
<td>Snow:</td>
<td>Henning Löwe</td>
<td>(2013-     )</td>
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Division Structure

Louis Agassiz Medal Committee
Dorthe Dahl-Jensen, Chair (2014)
Julian. A. Dowdeswell (2011)
Ian Joughin (2012)
Florent Dominé (2013)

ex-officio member without voting rights:
Jürg Schweizer
The 2014 Louis Agassiz Medal is awarded to Dorthe Dahl-Jensen for her outstanding scientific contributions in polar glaciology and her leadership in international projects that have extended climate records from Greenland ice cores back into the last interglacial.
The 2014 Arne Richter Award for Outstanding Young Scientists is awarded to Matthias Huss for innovative contributions to improving the understanding of the mass balance and runoff of glaciers and their sensitivity to climate change.
Outstanding Student Poster Award

Joanna Fredenslund Levinsen

The 2013 Outstanding Student Poster (OSP) Awards is awarded to Joanna Fredenslund Levinsen for the poster entitled:
Validation and inter-comparison of surface elevation changes derived from altimetry over the Jakobshavn Isbræ drainage basin, Greenland – Round Robin results from ESA’s Ice_Sheets_CCI (Fredenslund Levinsen, J.; Khvorostovsky, K.; Ticconi, F.).
Validation and inter-comparison of surface elevation changes derived from altimetry over the Jakobshavn Isbrae drainage basin, Greenland – Round Robin results from ESA’s Ice_Sheets_CCI (ID #EGU2013-6007)

Joanna Fredslund Leevins (JI@space.dtu.dk), Kirill Khvorostovsky, Francesco Ticconi
1) DTU Space, Technical University of Denmark, Building 327, Elektrovej, 2800 Kgs. Lyngby, Denmark
2) Nansen Environmental and Remote Sensing Center, Thorshovdsgate 47, 5006 Bergen, Norway
3) School of Earth and Environment, University of Leeds, Leeds LS2 9JT, United Kingdom

Abstract
In order to ensure long-term records, ESA has launched the Climate Change Initiative (ESA CCI), which puts focus on 13 different Essential Climate Variables, one of them being Ice Sheets. In this program, four selected key parameters will be determined for the Greenland Ice Sheet: Surface elevation changes (SEC), surface velocities, calving front locations, and grounding line locations.
This work focuses on SEC, and the goal is to develop the best routine for estimating this by means of radar altimetry, in order to find the most optimal approach, we have completed a Round Robin experiment (RR) in which researchers from various European and US institutions have provided SEC estimates derived from either ENVISAT radar or ICESat altimeter data. The test area was Jakobshavn Isbrae drainage basin, and by analysing, inter-comparing and validating the results, we have found that a combination of repeat-track and cross-over analyses will result in SEC estimates with a high spatial resolution and low error estimates.

Results from Round Robin participants:
The RR participants are named SEC-1, SEC-2, ..., SEC-10, and their results (Table 1 and Figure 1) show that:
- SEC-1’s ENVISAT results resolve SEC remarkably well demonstrating the potential of radar altimetry for such an analysis.
- Best agreement between ICESat and ENVISAT repeat-track results found in SEC-3. ICESat results best resolve SEC by outlet.
- Due to scarcity of cross-over points, these cannot be used to resolve SEC by outlet.
- Validation of the SEC trends were performed with airborne lidar data from NASA’s shuttle and ESA’s CryoSat campaign. They showed (Figure 2):
- Generally good agreement results, however best inland where slope effects are smallest.
- Best cross-over results from lidar rather than radar altimetry. Solved to result from ICESat’s smaller footprint size, can better resolve the actual SEC trend.
- As slope-induced errors in cross-over points can be ignored using data from ascending and descending tracks, overall lowest errors found for cross-over data.

The following inter-comparisons of the RR results were carried out in order to find the most optimal way for estimating SEC throughout GIS:
- Radar vs. lidar: SEC-1
- Range related uncertainty
- SEC-2: SEC-5
- SEC-6: SEC-10
- SEC-7: SEC-8
- SEC-9: SEC-10
- SEC-10: SEC-9
- Observation period: 2002 – 2010
- Output parameters: dh/dt, time series

Table 1: Information on the Round Robin participants’ analyses and observation periods.

Conclusions:
- Generally smaller ICESat than ENVISAT errors. Probably due to ICESat’s smaller footprint size, more realistic resolution of actual SEC trend.
- SEC-1’s lidar results show large potential for the use of radar altimetry to derive SEC throughout the Greenland Ice Sheet including its margin.
- Most optimal SEC estimates can be obtained by combining repeat-track (high spatial resolution) with cross-over (low error in cross-over points). This allows for obtaining reliable values both inland and in areas with a rough surface topography such as the ice margin.
EGU Medals and Awards

- **Union medals**
  Alfred Wegener Medal (senior late-career scientists)

- **Union awards**
  Arne Richter Award for Outstanding Young Scientists

- **Union travel awards**

- **Division medals and awards**
  Louis Agassiz Medal (‘mid-term’ scientist)
  Outstanding Young Scientist Award
  Outstanding Student Poster Award

Deadline for proposing candidates for 2015 is **15 June 2014**.
The Cryosphere

- An open access journal
- Impact factor 3.77
- The leading journal in its field

Open access is the future of scientific publishing!
EGU 2014 issues, plans for EGU 2015

- Lecture Rooms ?
- Suggestions for improving the program ?
- PICOs ?
- Poster sessions generally 5:30-7:00 pm ?
- Please propose new sessions for 2015.
- Time of the Medal lecture: 7-8 pm ?

EGU 2015: 12 - 17 April 2015