Big Data Challenges to Modern Statistics

14th eVITA Winter School in eScience sponsored by **X** Norges **forskningsråd** Dr. Holms Hotel, Geilo, Norway January 19-24, 2014

Welcome & Introduction

Dr. André R. Brodtkorb Research Scientist SINTEF ICT, Dept. of Applied Mathematics



Acknowledgements

The Winter School in eScience is sponsored by X Norges forskningsråd

2014 organizing committee



Professor Arnoldo Frigessi University of Oslo



Dr. André R. Brodtkorb SINTEF ICT

About the Winter School

- Organized since 2001
 - Knut-Andreas Lie organizer from 2001-2012
 - André R. Brodtkorb organizer since 2011





| | Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | | | |
|---------------|---------|---------------|-----------------------------|------------------|----------|---------|--|--|--|
| 07:00 - 09:00 | | Breakfast | | | | | | | |
| 09:00 - 10:30 | | Lecture | Lecture | Lecture | Lecture | Lecture | | | |
| 10:30 - 12:30 | | Brook (lupe | Break (lunch 12:30 - 14:00) | | | | | | |
| 12:30 - 14:45 | | DI EOK (IUIII | DIEGK ((UHCH 12:50 - 14:00) | | | | | | |
| 15:00 - 16:30 | | Lecture | Lecture | Lecture | Lecture | | | | |
| 16:30 - 17:00 | | Coffee | | | | | | | |
| 17:00 - 18:30 | Lecture | Lecture | Lecture | Lecture / Poster | Lecture | | | | |









About the Winter School

- Funded by the Research Council of Norway through a series of projects
 - Winter schools in computational mathematics (2001-2004)
 - Winter schools in computational mathematics (2005-2006)
 - National Arena in eScience (2007-2010)
 - eVita Winter School (2011-2015)
- The winter school is a place to learn something new and to meet fellow researchers
 - A long break for skiing and socializing in the middle of the day
 - Typically a three course meal served every day
 - Use this opportunity to socialize and meet interesting contacts
- The lectures targets Ph.D. level students and young researchers

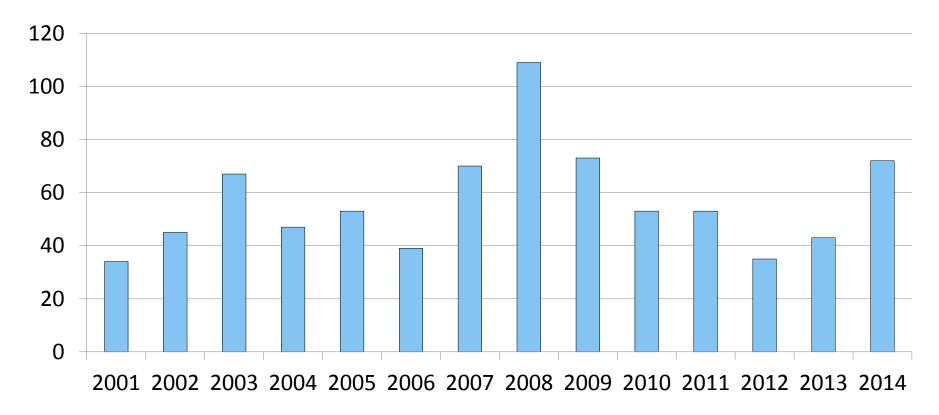


Winter school topics

- 2001 Beowulf Clusters
- 2002 Computational methods for fluid mechanics
- 2003 Numerical methods for nonlinear partial differential equations and Level set methods
- 2004 Adaptive methods for PDEs
- 2005 Invers problems and parameter identification for PDE models
- 2006 Automating the finite element method and turbulent flow simulation
- 2007 Monte Carlo methods
- 2008 Parallel computing
- 2009 Optimization
- 2010 Automatic differentiation
- 2011 Mathematical and numerical methods for multiscale problems
- 2012 Continuum mechanics
- 2013 Reproducible science and modern scientific software
- 2014 Big data challenges to modern statistics
- 2015 -



Number of participants





Information about Dr. Holms

- An old hotel, opened in 1909
 - They even have their own hotel ghost, the Grey Lady.
- Meals
 - Breakfast from 7:30 to 9:00
 - Lunch from 12:30 to 14:00
 - Dinner at 19:30
 - Coffee breaks with light snacks
 - Please: no ski boots, shorts, sandals etc. in the dining hall
- Use the meals and breaks as an opportunity to meet someone new
- All beverages must be paid for separately



Dr. Ingebrikt Christian Holm



Ghost Woman, Nelson Soucasaux

Information about Dr. Holms

- Discounted ski passes can be bought at the reception
 - 3 hours for 180 NOK (50 NOK for a keycard)
- Ski and snow rentals also at a discount
 - 50% discount mid-week
- You may eat lunch in the slopes:
 - Get a coupon at the reception <u>before 10:00 AM</u>
- Bowl & Dine with bowling hall
 - 50 meters to the left of the main entrance
- Swimming pool
- Spa department open for reservations

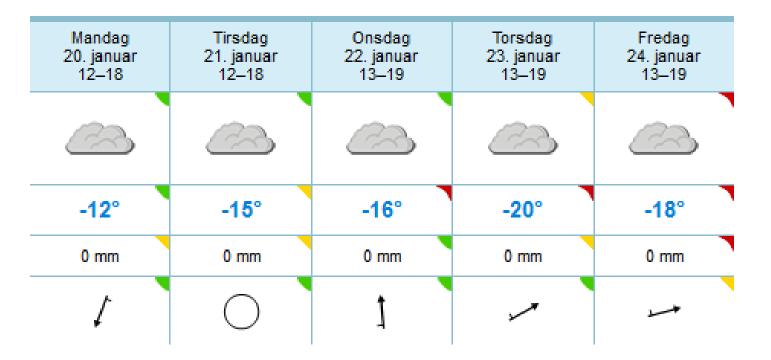








Weather forecast for Geilo



Yr.no, 2014-01-19

Internet

Network name: Dr. Holms Hotel

Username: drholms1

Password drholms1

With great power comes great responsibility

- Please use the internet responsibly and pay attention to the lectures
- Don't use your laptop or smartphone during lectures for:
 Excessively checking mail, working, reading online news, chatting, playing games, ...
 There is ample time during breaks to answer the most important emails etc.





Winter School Program

| | Sunday | Monday | Tuesday | Wednesday | Thursday | Friday |
|---------------|--------------|----------------|----------------|-------------|----------------|--------------|
| 07:30 - 09:00 | | | | | | |
| 09:00 - 09:45 | | Aila Särkkä | Laurent Younes | Elja Arjas | Laurent Younes | Steve Marron |
| 09:45 - 10:30 | | Alla Salkka | | | | |
| 10:30 - 11:00 | | | | | | |
| 11:00 - 11:45 | | | Laura Cangalli | | | |
| 11:45 - 12:30 | | | Laura Sangalli | | | |
| 12:30 - 15:00 | | | Lunch | | | |
| 15:00 - 15:45 | | Steve Marron | Ernst Wit | Elja Arjas | Jukka Corander | |
| 15:45 - 16:30 | | Steve Marron | | Aila Särkkä | | |
| 16:30 - 17:00 | | | | | | |
| 17:00 - 17:45 | Introduction | Jukka Corander | Laura Sangalli | Aila Särkkä | Ernst Wit | |
| 17:45 - 18:30 | Elja Arjas | Jukka Corander | | Poster | | |
| 19:30 | | | | | | |

Lectures start on the hour, not quarter past.

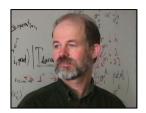
Out of respect for our lecturers, please be on time (also for the morning lectures)!

Poster session on Wednesday

- From 17:45 18:30 on Wednesday
- Wide range of topics
- Light refreshments



Lecturers



Elja Arjas University of Helsinki, Finland



Laurent Younes
Johns Hopkins University,
United States



Laura Sangalli Politecnico di Milano, Italy



Jukka Corander
University of Helsinki, Finland



Aila Särkkä Chalmers University, Sweden



Ernst Wit
University of Groningen,
Netherlands



Steve Marron
University of North Carolina
at Chapel Hill, United States