# SNELLIUS NEWSLETTER

May 2015

## Introduction

In this edition of the Snellius monthly newsletter we give an overview of the upcoming activities and the upcoming graduation ceremonies. Thomas Frederikse, who works on tide gauges, is the new scientist of the month. We show some outstanding master projects, which will be under the supervision of Herman Russchenberg. Details on the projects can be found on the website of Snellius (www.snelliusdispuut.nl), which is continuously updated. Be aware that Snellius is organizing a department barbecue on the 4th of June.

## Upcoming activities

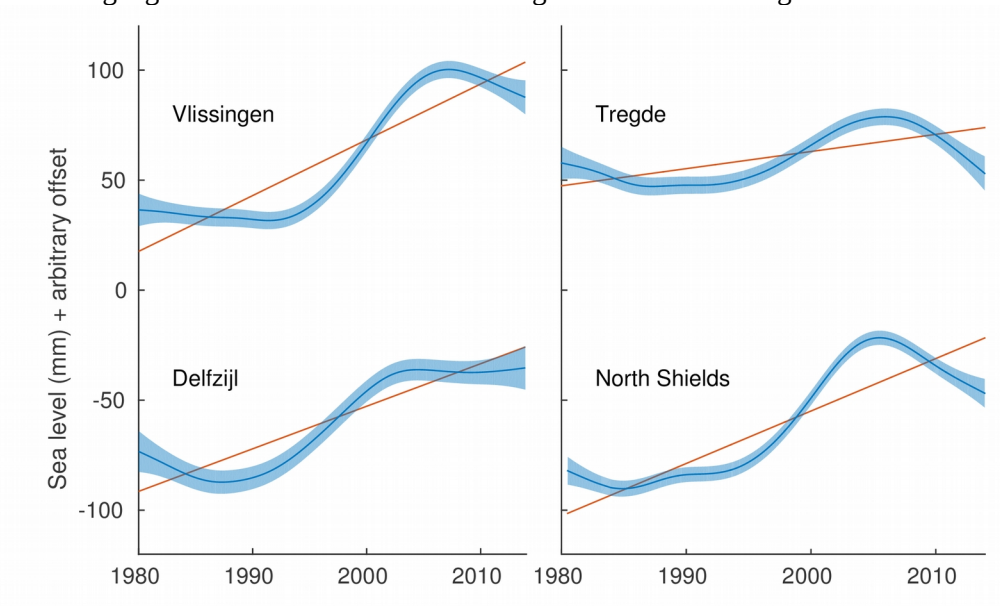
Thursday 21 May: Regular Snellius drink in the CiTG cafe, PSOR.

**Thursday 4 June: Department BBQ, next to the faculty building!** For all staff members. More information will follow soon.

## Scientist of the month

The scientist of this month is **Thomas Frederikse**. He does a Ph.D. in the group of physical and space geodesy on the topic: *'Multi-scale and self-consistent sea level changes from tide gauge data'*.

Sea level rise is one of the most visible consequences of climate change. During the past century, a global sea level rise of 17 cm has been measured, and for the next century, a total rise of 40-85 cm is expected. On a regional scale (e.g. the North Sea), large deviations from the global average are expected and measured. My task is to use tide gauge measurements to determine regional sea level changes.




One of the biggest challenges is to find sources of variability in which we are not interested, such as wind (causes surges) and tides, and remove them from the data. Large atmospheric reanalysis datasets, for example ERA-interim, provide us with wind and air pressure data. With this data, we can remove sea level changes due to wind and pressure from the tide gauge measurements. Sea level changes that remain may be linked to thermal expansion and ice sheet melting.

For the North Sea we have found a consistent pattern of variability with a time scale of roughly 10-20 years, which can be seen from the Dutch coast up to Norway and Scotland. In the picture, you see the sea level at 4 tide gauge stations around the North Sea. The consistent pattern is clearly visible!
*We are now looking into the relationship between sea level variability in the North Sea and thermal expansion over the North Atlantic, so stay tuned!*

## Master projects and internships

Below we list the new master projects and internships. For details of and other projects/internships we refer to the website of Snellius: www.snelliusdispuut.nl.

**How good are weather radars for rainfall estimation?**
Radar, rainfall, clouds
*Herman Russchenberg*

**How is rain formed?**
Raindrops, ice crystal growth, radar
*Herman Russchenberg*

**No dust, no clouds**
Air pollution, aerosols, clouds, lidar
*Herman Russchenberg*

**The weather in Rotterdam**
Climate change, temperature, weather stations
*Herman Russchenberg*

**What is the shape of a raindrop?**
Radar, droplet size and shape, rain intensity
*Herman Russchenberg*

## Graduation

A list of upcoming graduation ceremonies.

Tuesday 5 May: Hamid Reza Ghafarian Malamiri defends his Ph.D. on the subject "*Reconstruction of gap-free time series satellite observations of land surface temperature to model spectral soil thermal admittance*".

Friday 22 May: Pooja Mahapatra defends her Ph.D. on the subject "*CATO: monitoring surface deformation due to CO2 injection*".

## Partners

TU Delft Delft University of Technology