

Sea level talks 2020 – Fall programme

Webinars about ongoing sea level research in the Netherlands

Speakers from IMAU - Utrecht University, the Royal Netherlands Institute for Sea Research (NIOZ), the Royal Netherlands Meteorological Institute (KNMI), and TU Delft. Sponsored by the TU Delft Climate Institute.

We are organising a series of webinars to showcase high-profile Dutch research projects related to sea level change.

Considering that many scientific meetings have been cancelled or postponed, while research projects continue to make progress, we wish to provide early career researchers with an additional chance to present their work and to engage in a public debate.

The webinars will target (under-)graduate students, fellow scientists in academia and research institutes, as well as any interested people with a scientific and/or technical background.

The talks will be held via Zoom. Presentations will last for about 30 minutes, followed by another 30 minutes of public discussion.

Upcoming webinar (starting at 4 p.m. CET):

- **10 December 2020:** Inger Bij de Vaate (TUD)
“The influence of Arctic sea ice on seasonal variation of tides”

Practical information

Join Zoom Meeting: <https://tudelft.zoom.us/j/99063756967> (Meeting ID: 990 6375 6967)

For questions: Dr. Riccardo Riva (r.e.m.riva@tudelft.nl)

Abstract 10 December 2020

The influence of Arctic sea ice on seasonal variation of tides

Inger Bij de Vaate – TU Delft

There is a growing consensus that changes in the extent of Arctic sea ice affect local tides. However, observations are restricted, and many models still treat tides as constant throughout the year. As a first in its kind, the presented study maps the seasonal variations in the main M₂ tide for the entire Arctic region, based on water levels derived from satellite altimetry. To better understand the relation between observed variations in tides and the seasonal sea ice cycle, model simulations were done with varying annual extents of (land fast) sea ice cover. Both observations and simulations show reduced tidal amplitudes in winter months in most regions where sea ice is present, while other regions experience the opposite. Not all of the observed seasonal variation in tides could be explained by the influence of sea ice, which suggests other seasonal processes to be additionally important. Finally, I will present preliminary results of an ongoing study concerning the influence of seasonal variations in Arctic sea ice on global tides.

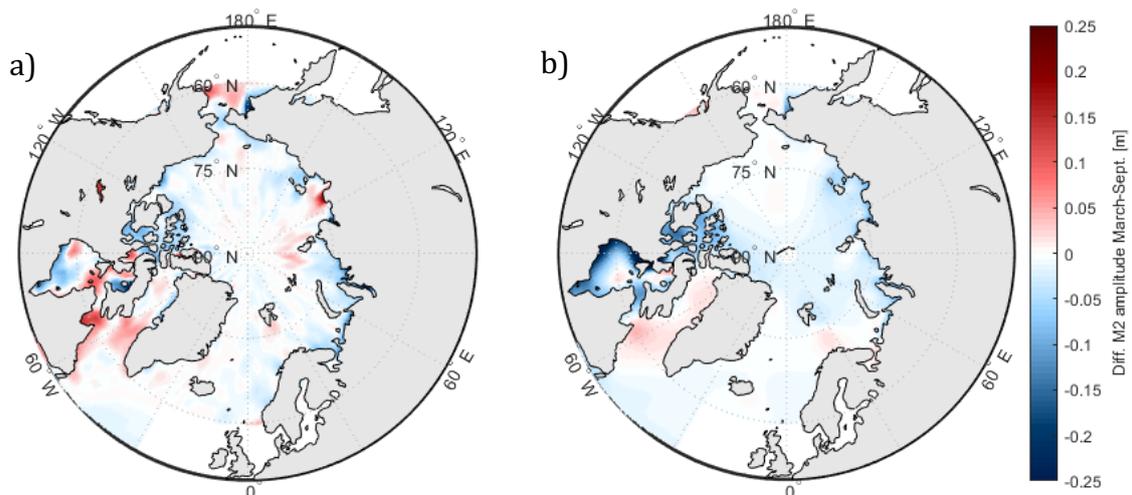


Figure: Difference between March and September amplitude of the M₂ tide as derived from altimetry (a) and from model simulations forced by varying extents of fast ice cover (b).