



SUCCESS STORY

CASSANDRA - Assessing the melting of Greenland Horizon 2020 | ERC Consolidator Grant

Greenland is melting and oceans are rising. The Horizon 2020 project CASSANDRA - Accelerating mass loss in Greenland: firn and the shifting runoff limit - studies the melting of the Greenland ice sheet. The project is run by Horst Machguth, professor at the Department of Geosciences at the University of Fribourg.

Her blessing was predicting the future, but her curse was that nobody would believe her. Professor Horst Machguth named his project CASSANDRA in a cheeky reference to how climatologists often feel. CASSANDRA is an attempt to assess how the Greenland ice sheet will be melting during the 21st century. Funding comes from a Horizon 2020 European Research Council (ERC) Consolidator Grant. ERC grants promote frontier research, new and promising ideas.

How Greenland melts

The melting of the Greenland ice sheet is currently the largest contributor to sea level rise – there is much more ice in Antarctica, but it is not melting as rapidly. Machguth has led several expeditions all across Greenland to monitor the ice sheet. The ERC project will study this melting with expeditions on the ground and satellite data.”

‘Studies say that almost 50% of the meltwater that forms each year on Greenland never leaves the ice sheet. How could this percentage change in the future?’

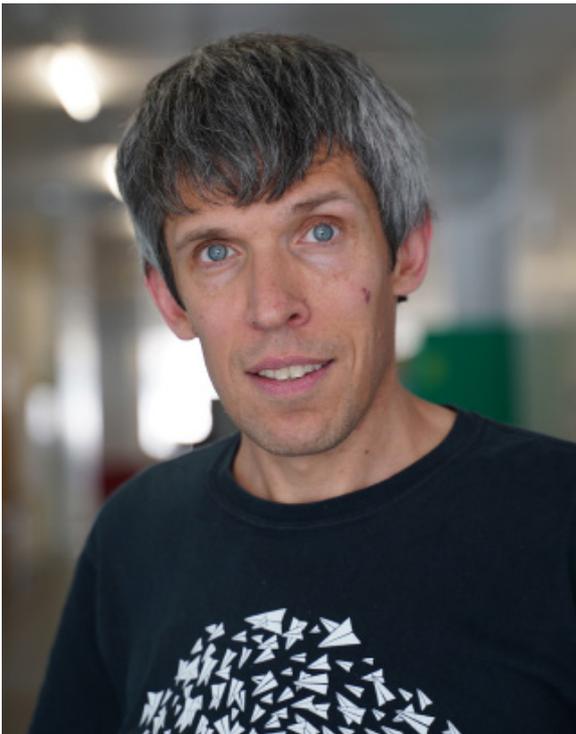
“500 cubic kilometers of meltwater form each year on the Greenland ice sheet”, he explains. “We think the firn – the layer of compacted snow a few meters below the surface – plays a key role in modulating

the effect of global warming.” As the glaciers warm up, the firn loses its ability to absorb meltwater, and starts acting as a waterproof layer. Rivers of meltwater forming at the surface of the ice sheet cannot sink back into the glacier, and flow towards the sea. “We want to understand the magnitude of this contribution to sea level rise”.

Expeditions and satellites

The ERC grant will fund several expeditions to Greenland with customized advanced measuring equipment, as well as the use of satellite data to map the runoff waters, the snow and ice conditions, and the ice loss across the whole giant island.

'The ERC international competition was an exciting experience. Now that the project is running I have a large degree of freedom in my research.'
(Prof Horst Machguth)



Professor Horst Machguth
(image: Christian Donielli)

Euresearch is an information and advisory service on the European Research and Innovation Framework Programmes. It has offices in all the Swiss regions and a Network Office in Bern. Euresearch is a non-profit association supported by the Swiss confederation.

PROJECT

CASSANDRA is a 5-year project, based at the University of Fribourg, led by Professor Horst Machguth, funded by an ERC Consolidator Grant under Horizon 2020. It will give a global overview of ice sheet runoff in Greenland. The project will provide an important piece of the puzzle of assessing the impact of climate change.

FACTS & FIGURES

Project Name CASSANDRA - Accelerating mass loss of Greenland: firm and the shifting runoff limit

Programme Horizon 2020 Excellent Science: European Research Council Consolidator Grant

Project Dates 01.05.2019 - 30.04.2024 (5 years)

Project Cost € 2.0 millions

Project Funding € 2.0 millions

More information www.unifr.ch

**UNI
FR**
UNIVERSITÉ DE FRIBOURG
UNIVERSITÄT FREIBURG

