



## Linking observations and models to advance knowledge of melting ice in Greenland and Iceland

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Record high temperatures have recently been driving significant melting of the Greenland ice sheet, glaciers and permafrost. This ice loss, leading to increased fresh water into the North Atlantic region, risks destabilizing ocean circulation and weather patterns, with severe consequences for local communities in Greenland, Iceland and beyond.

The EU-funded project ICELINK aims to bridge the knowledge gap between climate models, ice-flow models, satellite observations and in-situ observations to accelerate the understanding of how glaciers and ice sheets in the North Atlantic respond to climate change, and their impacts on climate and ecosystems. Through improved understanding of snow, surface mass balance and the ice dynamical response to meltwater runoff, ICELINK will provide new knowledge of the processes that control the evolution of the Greenland ice sheet and Icelandic glaciers in response to global warming. Specifically, ICELINK will work with local communities to co-develop knowledge and strengthen adaptation strategies, helping them to mitigate risks and build resilience on hydrology and ecosystem risks. Further, ICELINK will use Icelandic glaciers as a data-observation laboratory to study the response of the Greenland ice sheet in a warmer world with more melting.

The presentation will discuss the importance of including observation-based knowledge to understand the mass loss from the Greenland ice sheet and Icelandic glaciers, which is a key focus of ICELINK. We will give an update on our research towards obtaining consistent observations-and-model-integrated datasets on surface mass balance (SMB), the ice dynamical response to surface melt and historical records of climate forcing trends and variability. These are key components in understanding the melting of North Atlantic ice and assessing the impact on Earth's climate.

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