

Model output and input for manuscript “Subglacial hydrology modeling predicts high winter water pressure and spatially variable transmissivity at Helheim Glacier, Greenland” (Sommers and others), submitted to *Journal of Glaciology*

## Contents

### Model output files

.mat files to be read and processed using ISSM Matlab interface

- Helheim\_winter\_A0\_1yr.mat – *main* simulation
- Helheim\_winter\_A0\_fric0\_1yr.mat – Zero frictional heat (*nofrictionheat*)
- Helheim\_winter\_A0\_driving\_1yr.mat – Frictional heat with driving stress as basal shear stress (*drivingstress*)
- Helheim\_winter\_A0\_03N\_1yr.mat – Frictional heat with yield stress as basal shear stress (*yieldstress*)
- Helheim\_shakti\_transient2020.mat – Transient simulation with low-elevation meltwater inputs

### Model input scripts and files

- runme\_Helheim3\_winterclean.m – script that sets up model domain, boundary conditions, initialization, and runs SHAKTI for 1 day
- runme\_Helheim\_continue\_spinup\_winterclean – script to continue SHAKTI simulation from the end of a previous run
- Helheim14.exp – Coordinates of model domain outline
- terminus13.exp – coordinates of terminus region for setting outflow boundary condition
- Greenland.par – Parameter initialization file (note that some parameters are modified in runme script after .par file is called)
- friction\_coefficient\_Nfinal.mat – Drag coefficients used in main SHAKTI simulation