

# Turbulence Observations in the Grounding Zone Region of Thwaites Glacier

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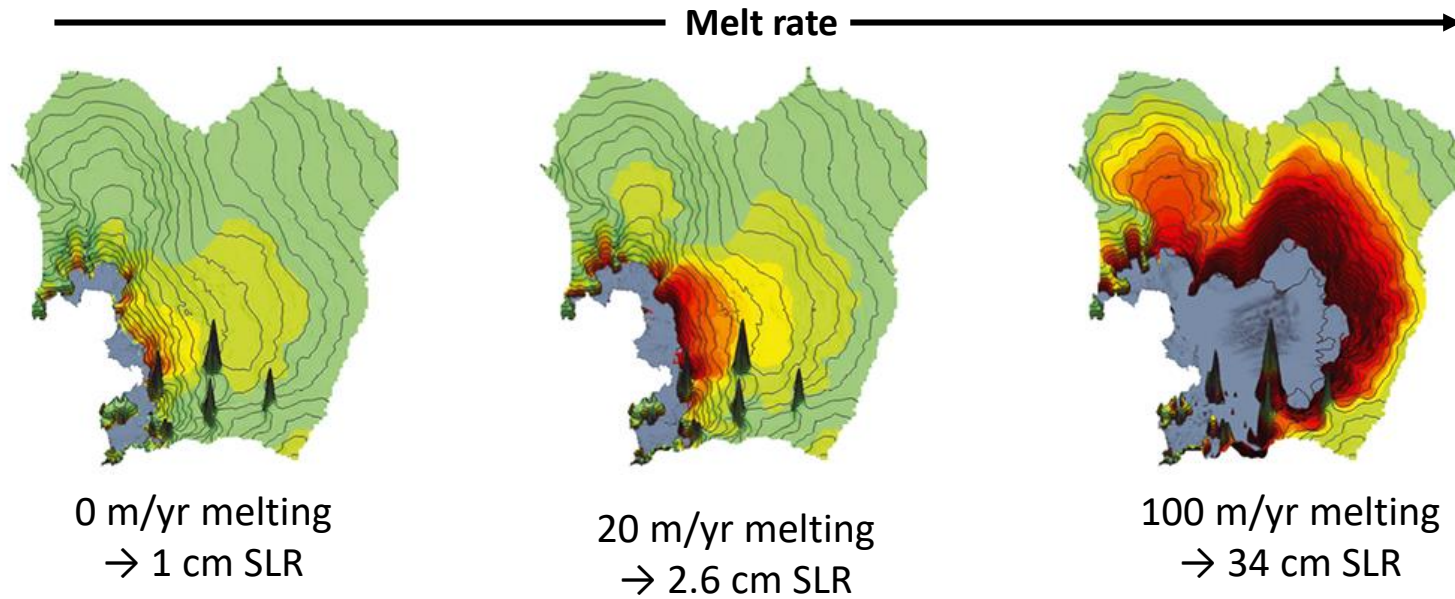
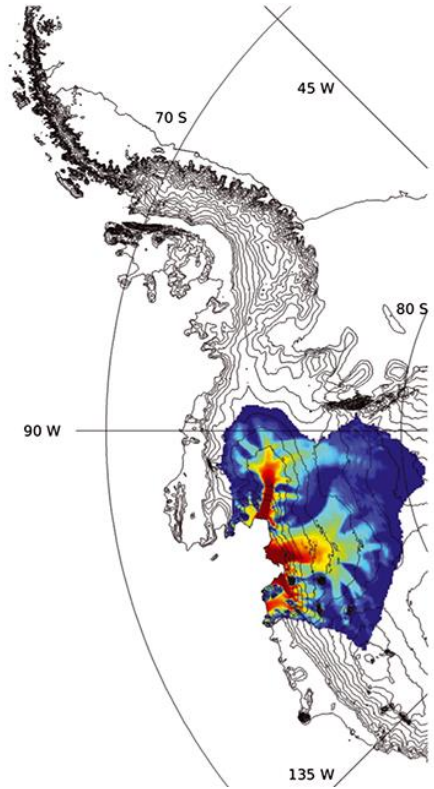
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# Motivation

Colours: mass loss  
Grey: floating ice shelf

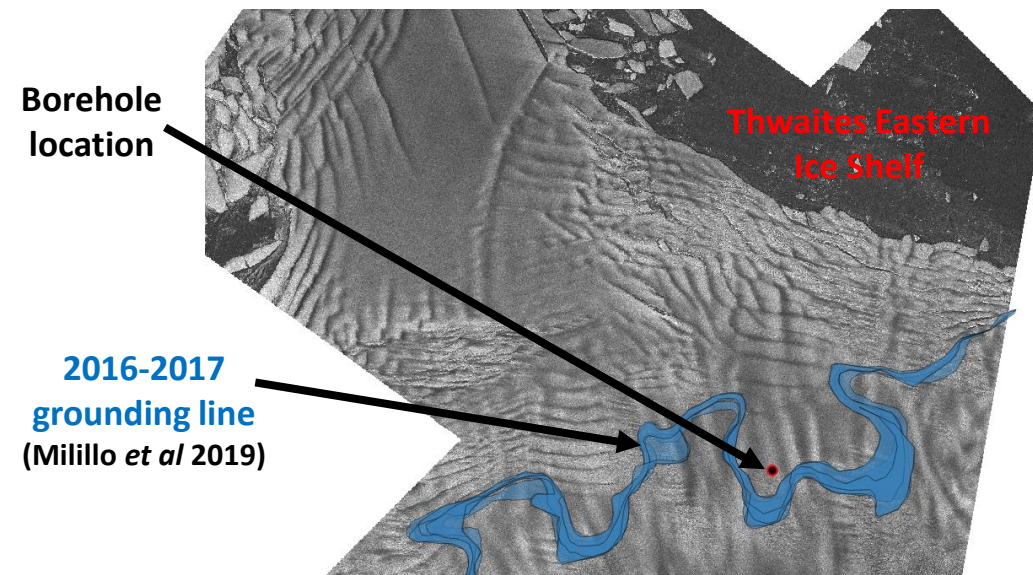
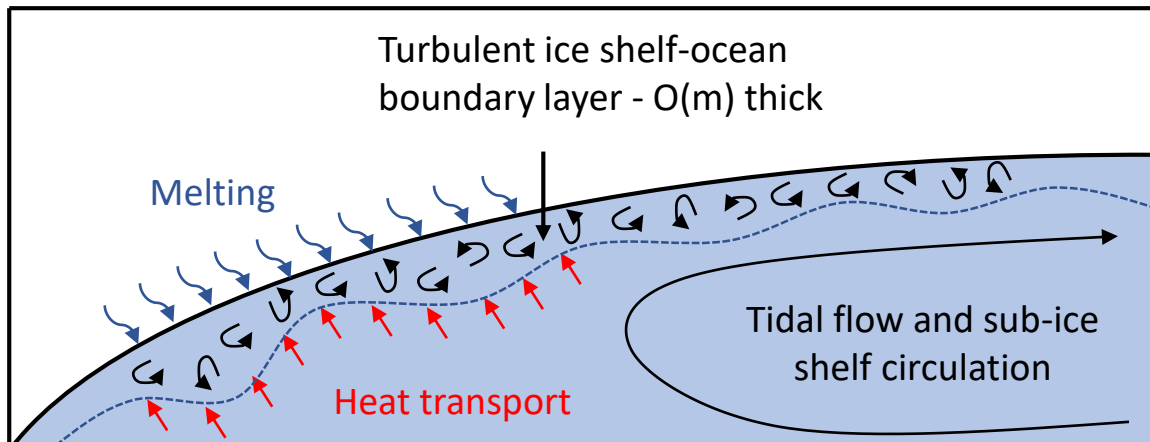


- Basal melting near ice shelf margins and grounding lines is particularly important for driving ice sheet mass loss.
- Basal melting in newly created sub ice shelf cavities is also critical in determining the magnitude of future sea level rise.
- ∴ robust estimations of Antarctica's contribution to global sea level rise require accurate representations of the magnitude and spatial distribution of ice shelf basal melting.

Arthern and Williams, (2017)



# Turbulence Observations



MAVS: Turbulence Instrument Cluster



- Basal melt rate set by heat transport through turbulent boundary layer. Physics poorly constrained and parameterised. Need high quality observations of the turbulent processes.
- 590 m borehole drilled through Thwaites Eastern Ice Shelf. Turbulence instrument cluster deployed 1.5 m beneath ice base.
- TIC: MAVS fast current meter and temperature sensor. 5 Hz sampling rate. 253 hours of continuous sampling after deployment. Now sampling for 15 minutes every two hours over winter.

