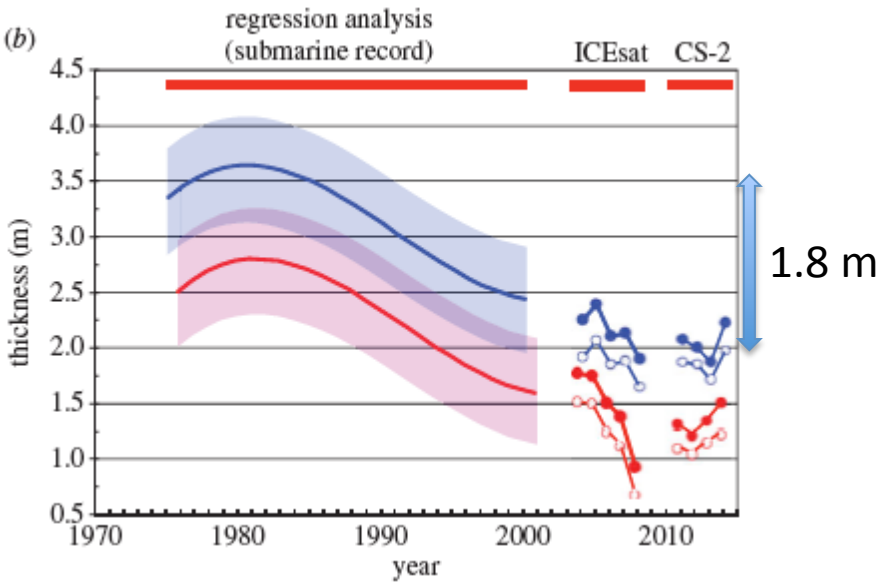
SWOT and the Ice-covered Oceans of the Arctic and Antarctic: Sea Surface Height and Sea Ice Freeboard

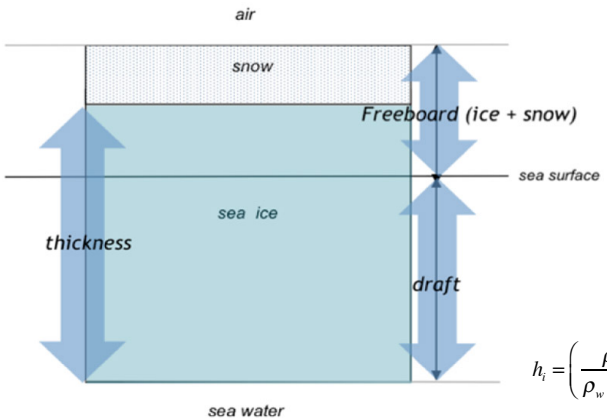
Ron Kwok
Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA

Thinning of the Arctic sea ice cover

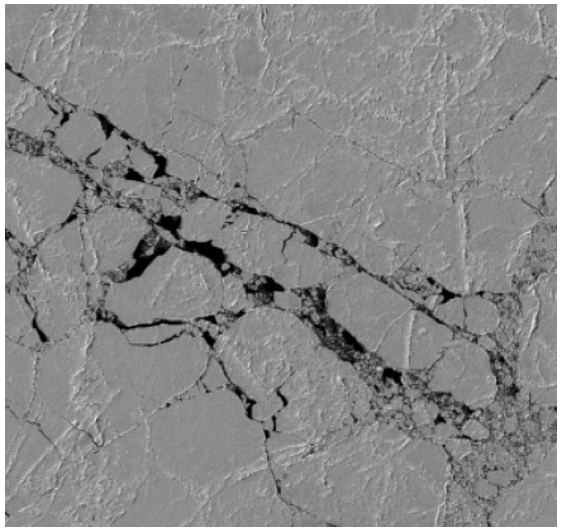


Kwok and Cunningham (2015)

Schematic showing the geometric relationships between sea ice freeboard, thickness, and draft.



$$h_i = \left(\frac{\rho_w}{\rho_w - \rho_i}\right) h_{fi} + \left(\frac{\rho_s}{\rho_w - \rho_i}\right) h_{fs}$$



Leads
-local sea level

- Monitoring interannual/seasonal changes
- Process studies
- Climate Projections
- Short term forecast (Arctic communities/navigation)
- Ecosystem Impact

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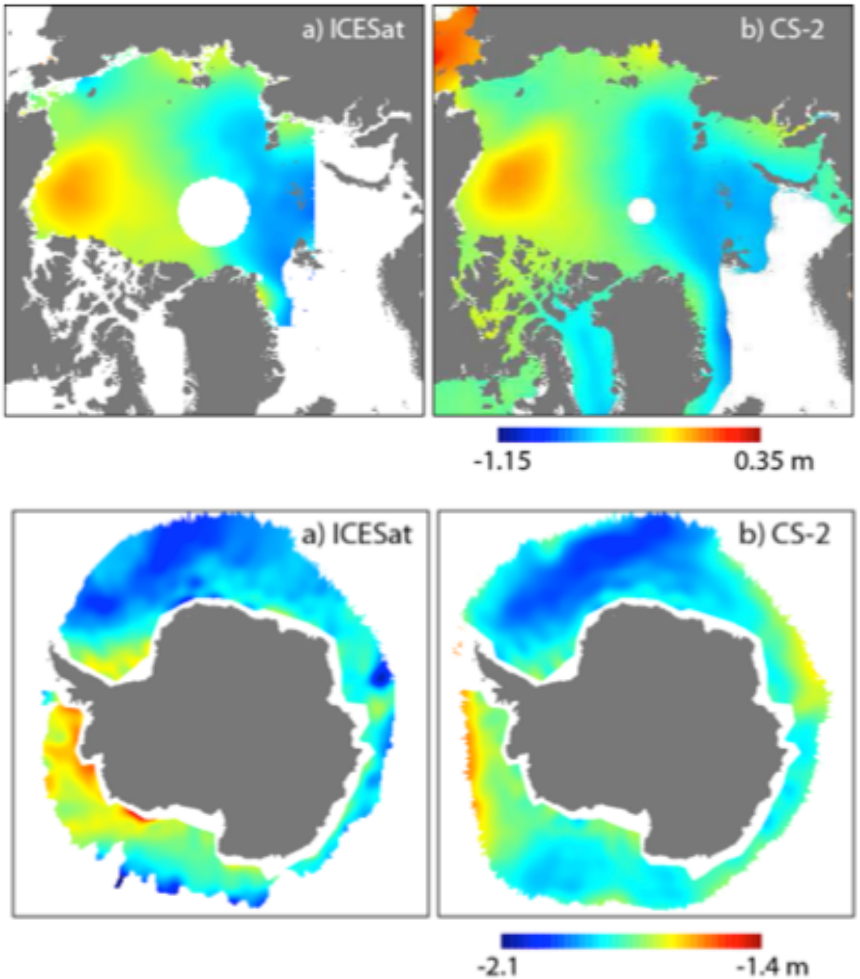

Dynamic Topography of Arctic/Southern Oceans

Kwok and Morison (2015)