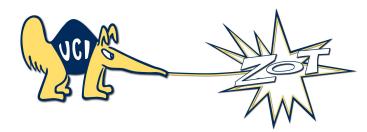




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Clouds' contribution to Greenland melt





Radiation Transfer Model



Cloud Radiative Forcing



Evaluate data from satellites, reanalyses, and *in-situ*



Simulated

Surface Radiation

VS.

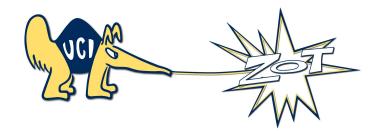
Measured

Surface Radiation





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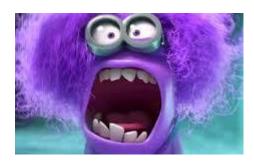


• **Expect** to run fully-coupled CESM on SDSC supercomputers to estimate the climate effect of increasing shipping emission due to the melt of the Arctic sea-ice

Problems:

- Funding
- Ported CESM?

Port CESM?!



Learnt: Efficiency! Efficiency! Efficiency!