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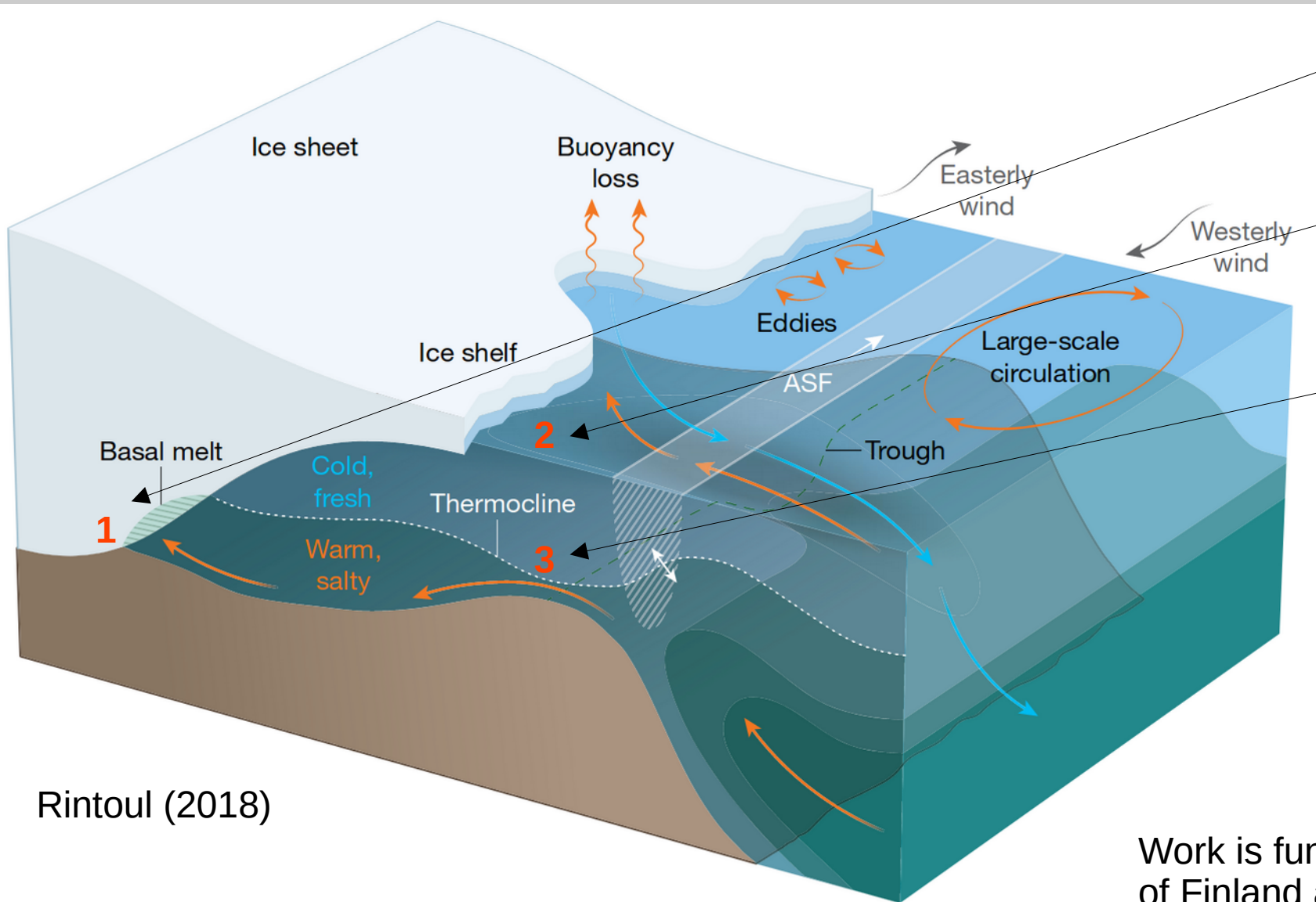
INSTITUTE FOR ATMOSPHERIC AND
EARTH SYSTEM RESEARCH



Polar ocean research

Petteri Uotila and the physical oceanography team

Ocean-ice shelf interaction



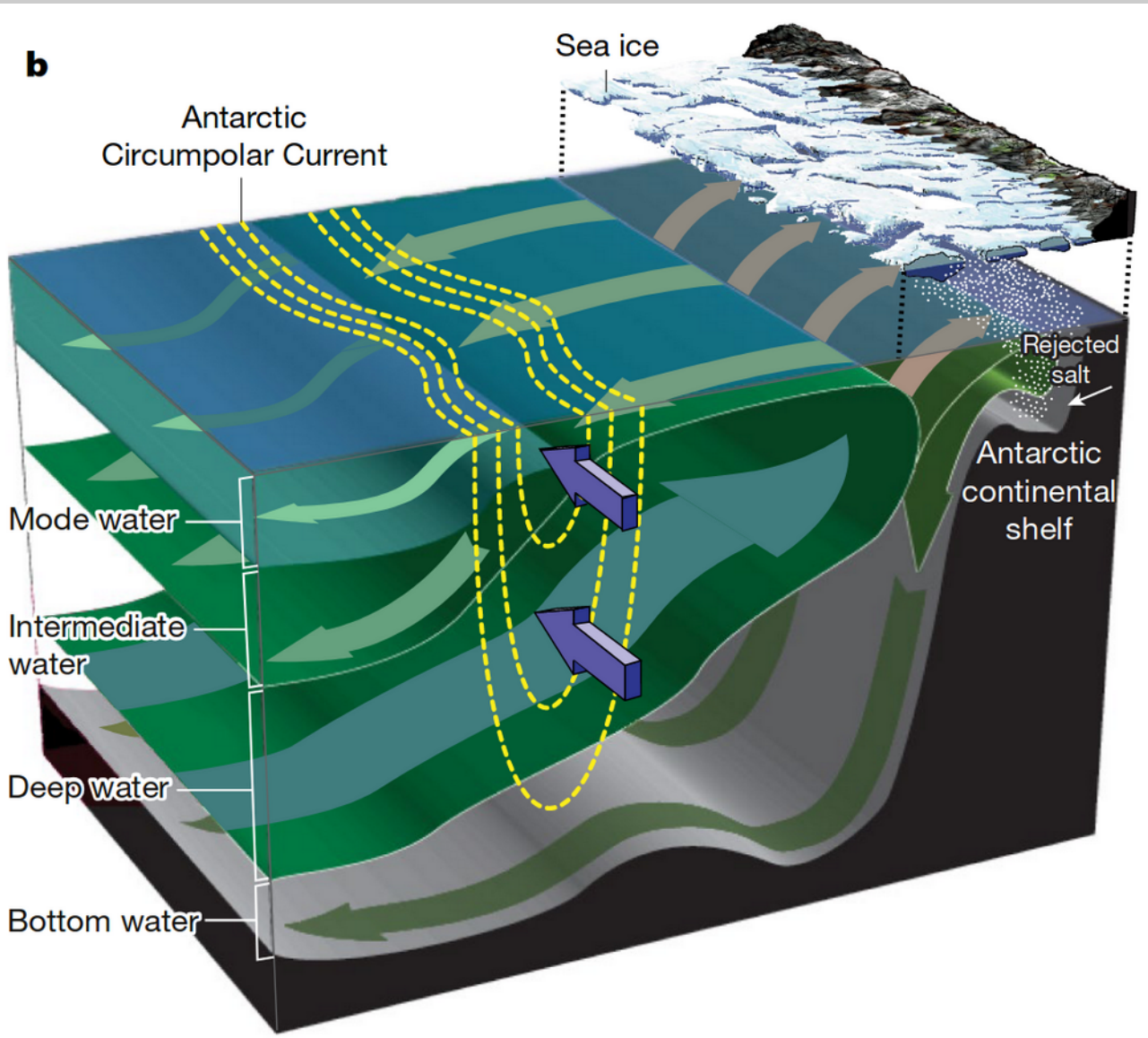
Rintoul (2018)

- 1) Coupled ocean-ice sheet model development (with University of Lapland) for more accurate regional sea level predictions
- 2) Water mass transformation on the Antarctic continental shelf (*Boeira Dias et al. 2023; Wang et al. 2021, 2023*)
- 3) Ocean circulation on the continental shelf and under ice shelves (*Maderich et al. 2023, 2024; Moore et al. 2024*)

Maderich, V., Bezhenar, R., Brovchenko, I., Bezhenar, A., Boeira Dias, F., & Uotila, P. (2022). Lagrangian pathways under the Filchner-Ronne Ice Shelf and in the Weddell Sea. *Ukrainian Antarctic Journal*, 20(2), 203–211. <https://doi.org/10.33275/1727-7485.2.2022.700>

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Air-ice interaction



Rintoul (2018)

- 1) Cyclones and surface energy balance over the Arctic Ocean (*Aue et al, 2023, 2022; Uhlíkova et al. 2024a, 2024b*)
- 2) Ocean model performance in the polar regions
 - Surface fluxes and convection in the Southern Ocean (*Boeira Dias et al. 2022*)
 - Southern Ocean sea ice in ocean reanalyses and models (*Nie et al. 2022, 2023a*)
 - CMIP6 Antarctic and Arctic sea ice (*Nie et al. 2023b, Zhang et al, 2024*)
 - CMIP6 Arctic ocean heat (*Langehaug et al. 2023*)
- 3) Model development on interaction between ocean surface waves and sea ice

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THANK YOU!

Any questions?

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