

Vertical structure of buoyancy transport by ocean baroclinic turbulence

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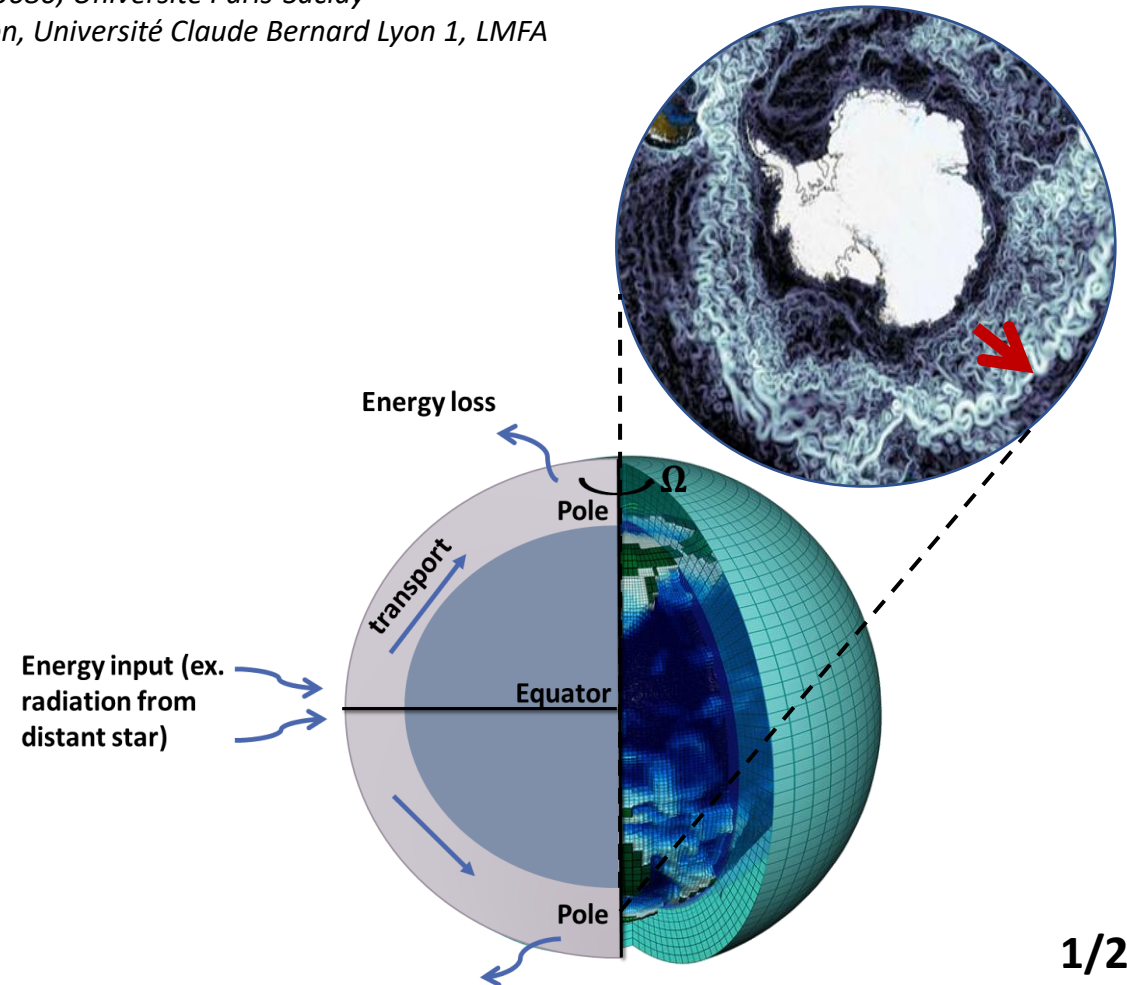
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- Ocean is subjected to **baroclinic instability** that transports heat from the equator to the pôles
- Forms turbulent structures at **mesoscales** (20-80km)
- Associated **heat transport** have to be parameterized for Global Circulation Models (coarser grid)



Physically-based parametrization of heat fluxes

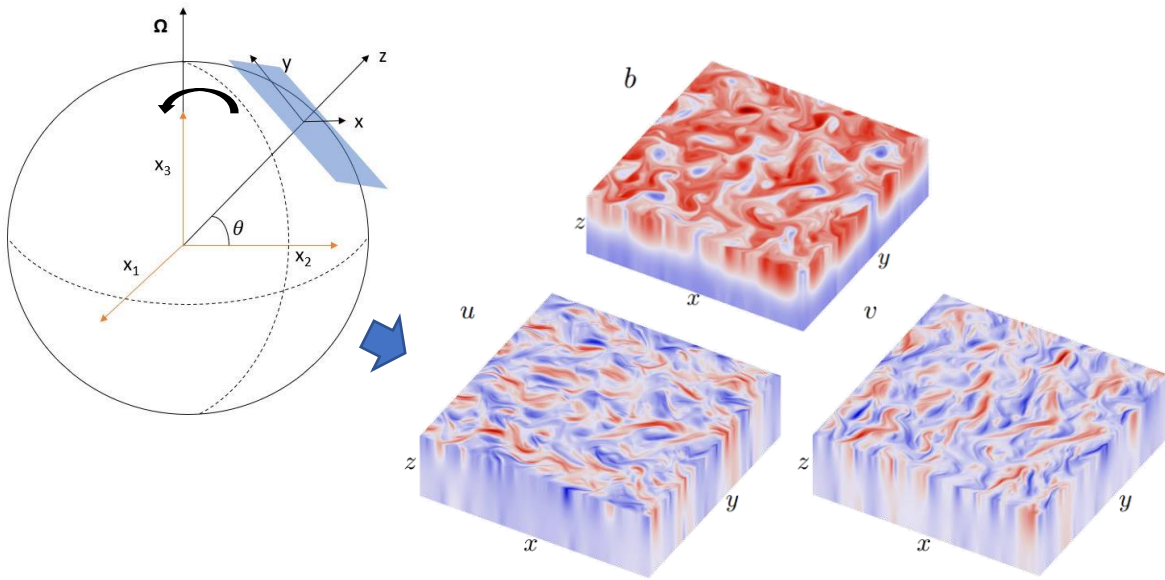
- Amplitude
- Vertical structure



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1. Derive a **diffusion tensor** directly from dynamics of a **patch of ocean** relating **fluxes** and **background gradients**
2. Find **additional constraints** on the transport coefficients
3. Solve for the **vertical structure** of the mesoscale heat fluxes



4. Compare to DNS of a patch of ocean

