

Cold-Region Estuaries Workshop

Hudson Bay – Baie d'Utson

Ocean system

Break-out group

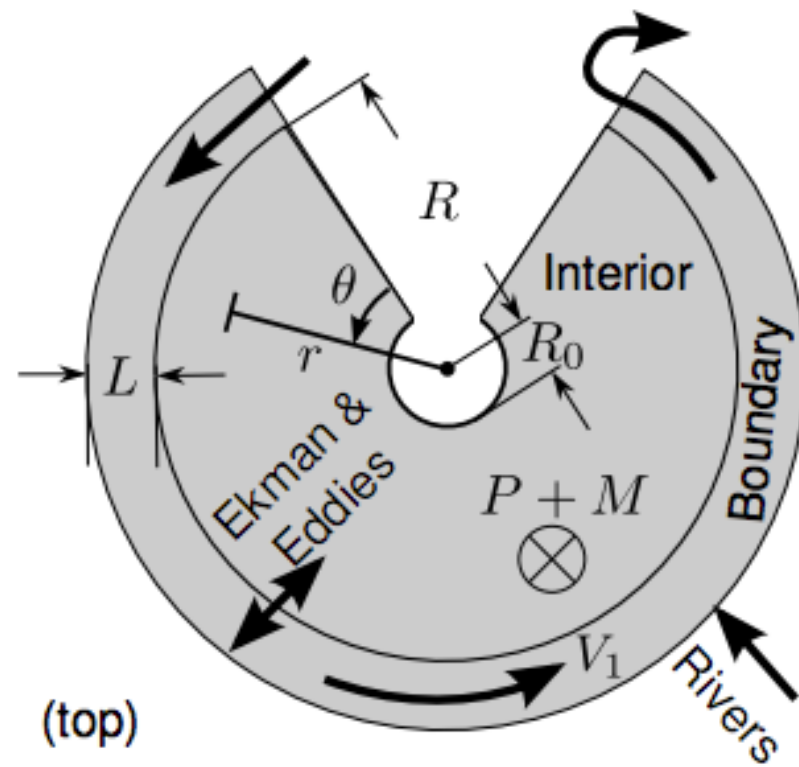
Top research priorities - Physics

1. Vertical mixing

- Wind & tidal driven, convection, upwelling, eddies, impact on nutrients, impact of river water and sea-ice

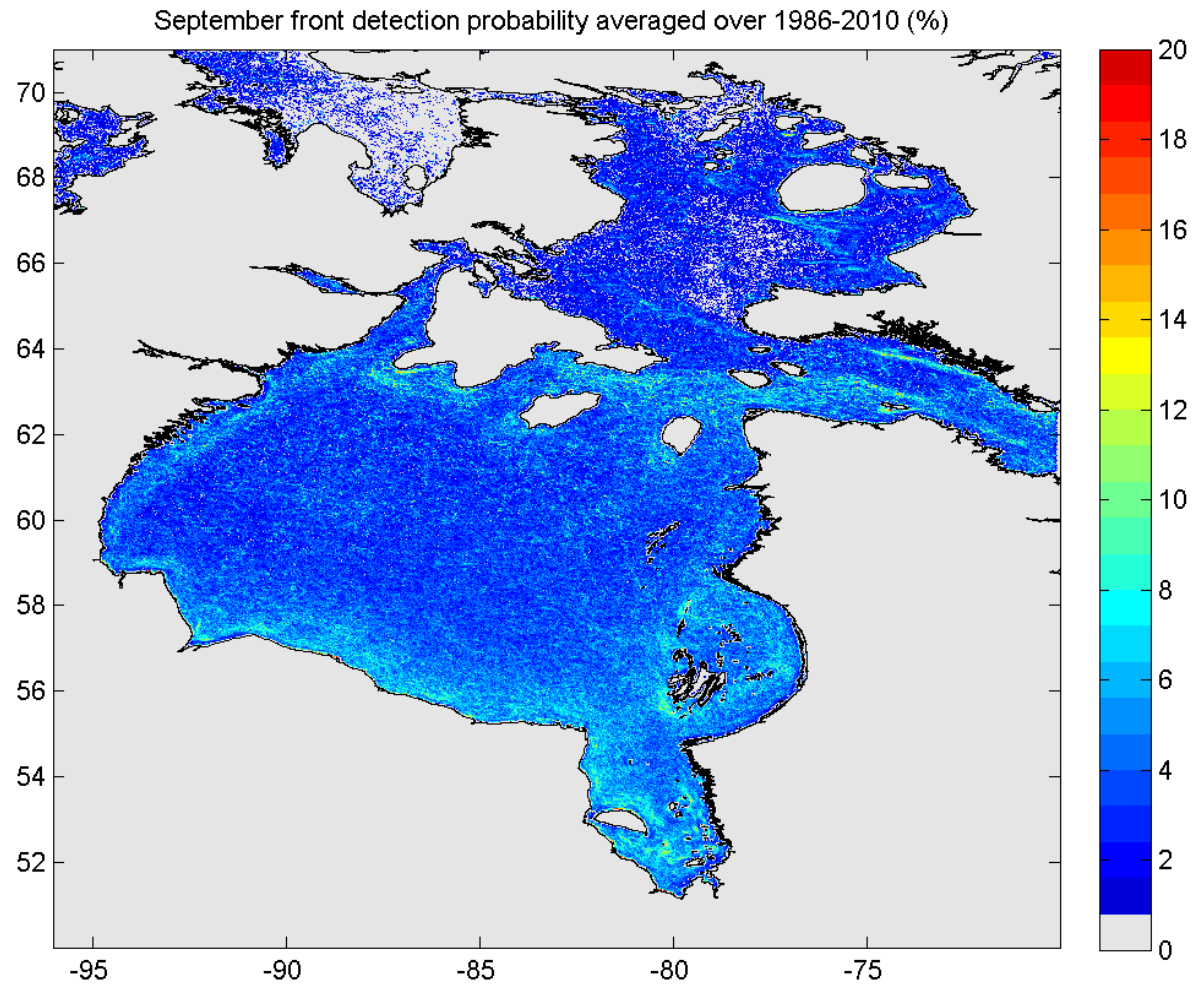
2. Mesoscale exchange between inner and boundary regions

Importance of mesoscale activity on boundary-interior exchange



25 y. September SST frontal climatology

Unpublished results (Larouche)



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1. Vertical mixing

- Wind & tidal driven, convection, upwelling, eddies, impact on nutrients, impact of river water and sea-ice

2. Mesoscale exchange between inner and boundary regions

3. Sea-ice dynamics

- Light penetration, timing of breakup, linkage to tides and thermodynamics, coastal ice dynamics, impact of declining sea-ice coverage, deep-water formation, precipitation on sea-ice

4. Particle transport, including biogeochemistry aspects

Top research priorities - Biogeochemistry

1. N cycle

- regeneration, lateral/vertical transport

2. Spring bloom vs. SCM

- Dynamics, magnitude, vertical C flux

3. Annual cycle of CO₂, and in fact of all components of biogeochemical cycles

1-y field program

- Two 1-month cruises on Amunsen in spring and summer, covering a rectangle from Churchill to Nelson Rivers, and inshore-offshore
- Moorings at 2 sites: NW and SW Hudson Bay
 - 2 moorings at each sites: inner and boundary
- Monthly expeditions
 - Inshore-offshore transects
 - High frequency sampling on fixed stations
- Ice- of shore-camps for sea-ice studies

Long-term observatory

- Moorings at 2 sites: NW and SW Hudson Bay
 - 2 moorings at each sites: inner and boundary
- Monthly expeditions
 - Inshore-offshore transects
 - High frequency sampling on fixed stations
- Gliders, AUVs, ?
- Ice- of shore-camps for sea-ice studies
- Remote sensing