







## Funded Postdoc, PhD, and MSc/MASc Positions – Open-Source Coastal Flood Modelling

The Environmental Fluid Dynamics Lab at the University of Calgary, <u>the Coastal Systems Engineering Lab</u> at the University of British Columbia, and the <u>Coastal Hydrology Lab</u> at Dalhousie University are seeking applications for up to 9 fully-funded positions for postdoctoral fellows (3 positions) and graduate students (6 positions). While PhD students are preferred for graduate student positions, exceptional MSc/MASc students will also be considered. The projects are funded through a new research/funding partnership between the academic institutions (University of Calgary, University of British Columbia, Dalhousie University), Public Safety Canada, and the Natural Sciences and Engineering Research Council of Canada.

**Project description and objectives**: This project is part of OPEN-FRANC (Open-Source Flood Risk Analysis Network for Canada), with the overall program goal of advancing Canada's capability to assess and manage flood hazards by harmonizing and upscaling floodplain modeling across the country. The team members recruited for the present positions will be focused on *coastal processes and flood hazard* modelling along lake and marine shorelines. Key outcomes of the overall program will be unified computational capacities, developed flood hazard products and predictive tools, integrative data services, and improved geospatial intelligence. We are specifically recruiting for Work Package 1, which focuses on modelling approaches to assess coastal hazards across Canada's diverse coastline. The three targeted sites are the Lower Mainland of British Columbia, Yellowknife in Northwest Territories, and the Chignecto Isthmus linking New Brunswick and Nova Scotia. The coastal hazards modelling work will be linked to riverine floodplain modelling in other work packages, especially for coastal rivers and estuaries.

The collective team of postdoctoral researchers and graduate students will use global datasets and local, high-resolution data to perform simulations in coastal models considering waves, surges, tides, and sediment transport. A range of models, including spectral wave models, hydrodynamic models, phase-resolving wave models, and reduced physics approaches will be considered. The projects will collectively contribute to the development of a cohesive, computational framework for simulating floodplain dynamics across diverse coastal regions in Canada. Team members will join an exciting national network of riverine and coastal flood modelers and contribute to Canada's emerging approach for flood hazard prediction and management.

**Candidate qualifications, application documents, and conditions of employment:** The ideal candidate will have coastal numerical modeling experience, excellent communication skills, relevant degrees in geoscience, coastal science, or engineering or a related field, experience with coding, and a team-oriented approach to research. The researcher will receive a competitive stipend, workstation, and support for attending international conferences/meetings. We value diversity and are committed to fostering an inclusive research environment—we especially welcome applications from members of underrepresented groups. Applicants can apply to one or more institutions, with the study site dependent on the selected institution and supervisor. Each institution has a similar number of positions.

- University of Calgary, supervisor <u>Dr. Qi Zhou</u>, study site is Great Slave Lake
- University of British Columbia, supervisor <u>Dr. Enda Murphy</u>, study site is Lower Mainland of BC
- Dalhousie University, supervisor <u>Dr. Barret Kurylyk</u>, study site is the mega-tidal Bay of Fundy

Applications (CV, transcript, names for 2+ referees, other material) can be submitted via <u>a Google Form</u>. Only applicants short-listed for an interview will be notified. Review of applicants will begin May 19, 2025, and continue until the positions are filled.