Ph.D. scholarship in physical oceanography

About the project

Surface waves play an important role in coastal erosion, sediment transport, navigation safety, infrastructure security, surface pollutants and objects dispersion, and search and rescue operations. Reliable and accurate forecasts of wave conditions are therefore a societal necessity. However, the reliability and accuracy of wave forecasts decrease for seasonally ice-covered seas, such as the estuary and gulf of St. Lawrence, due to the complexity of waves and sea ice interactions, which are difficult to take into account in operational wave forecast models. Parameterizations of these interactions are being developed, but they need to be tested against observations before they can be used operationally.

The main objective of this project is to study generation and propagation of waves in partially ice-covered waters by (1) acquiring new observations of waves and sea ice in the St. Lawrence Estuary, and (2) testing different parameterizations of waves and ice interactions. Existing parameterizations will be assessed and new parameterizations will be developed to improve numerical wave predictions in presence of sea ice. To measure waves and sea ice, we will use a novel combination of shore-based high-frequency radars (HFR), bottom-mounted acoustic wave, ice and current profilers (AWAC), and spaceborne synthetic aperture radars (SAR). A secondary objective of the project is to quantify the performance of HFRs for measuring waves in partially ice-covered seas, in order to predict areas of coverage for future deployments in high-latitude seas such as the Arctic.

Financial assistance

A scholarship of $19,000 per year is available for 3 years. A scholarship is also available to pay for the increased tuition fees that apply to foreign students.

Eligibility criteria

- Satisfy the basic requirements for admission in the Ph.D. program in oceanography at Université du Québec à Rimouski (http://www.uqar.ca/programmes/description/3292/);
- University degree in Physics, Mathematics or a related discipline;
- Basic knowledge in Physical Oceanography;
- Familiarity with data analysis software like Matlab
- Good reading and writing skills in English. French speaking is a plus.

Applicants should send to the person mentioned below:

- Curriculum vitae;
- Cover letter;
- University transcripts (B.Sc. and M.Sc.);
- Name and contact information of three references.

Selection of the candidates will begin on July 1st, 2015 and will continue until the position is filled. The selected candidate will have to register full time in the Ph.D. program in Oceanography at UQAR in fall 2015 or winter 2016 at the latest.

To apply or for more information please contact:

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