Postdoctoral fellowship on statistics of spatial extremes

A postdoctoral fellowship in statistics is available as part of the IVADO-Apogée FRP Grant “Combining extreme value theory and causal inference for data-driven flood hazard assessment”. The postdoctoral fellow will be based in Montréal as part of a team lead by Léo Belzile, Johanna G. Nešlehová, Alexis Hannart and Jenny Wadsworth.

The research project focuses on climate drivers impacting flood hazard and aims to propose methodological advances based on extreme value theory and causal inference in order to simulate realistic streamflow extremes at high resolution. The project will also investigate how climate drivers impact the hydrological balance using tools from machine learning for causal discovery to enhance risk assessment of flood hazard. Specific projects for the fellowship can include, but are not limited to, simulation of high-resolution output for hydrological models using the conditional spatial extremes model and extensions thereof, downscaling and preferential sampling for extremes, development of machine learning tools for spatio-temporal extremes and causal discovery, and handling and distribution of observational or simulated data.

• **Location:** Montréal (Canada) with a possibility of a research stay in Lancaster (United Kingdom)

Qualifications: The candidate should hold, or be near completion of, a PhD degree in statistics or a related field and have demonstrated oral and written communication skills and previous experience with data analysis. Expertise in one or more of the following areas is highly desirable: extreme value analysis; spatial and spatio-temporal statistics; stochastic processes. Knowledge of hydrology or climate science is an asset.

• **Duration and salary:** Initial appointment is for one year, starting any time between September 1st, 2020 and March 1st, 2021, and possibly renewable for an additional year. The postdoctoral fellowship is in the amount of $60,000 CAD per year including benefits.

• **Application procedure:** Applicants should provide (i) a curriculum vitae, (ii) a one-page cover letter and (iii) names of two references. Candidates should arrange for their two references to send recommendation letters. Please mention whether you are legally able to work in Canada in the motivation letter. Review of applications will start July 1st, 2020 and continue until a suitable candidate is found.

• **Commitment to equity and diversity:** We welcome and encourage applications from racialized persons/visible minorities, women, Indigenous persons, persons with disabilities, ethnic minorities, and persons of minority sexual orientations and gender identities.

Applications and enquiries for further information about the position should be sent by email to Léo Belzile (leo.belzile@hec.ca)