Postdoc (PDF) Opportunity: Wetland-climate feedbacks

to work on better understanding the feedbacks between wetlands, climate, and hydrology using models that are capable of simulating the unique climatological and hydrological conditions in the Canadian prairies, both now and in the future. The Prairie Pothole Region spans ~715 000 km^2 in Canada and US, and contains millions of wetlands. These wetlands provide many important ecosystem services including attenuating floods, storing carbon, and supporting globally important waterfowl populations. The objective is to develop a wetland-climate-hydrology system to understand the effects of climate change on prairie wetland abundance, distribution, and associated effects on wetland functions and waterfowl. This modelling system will couple a high-resolution numerical weather prediction model with an advanced land-surface model that has explicit representation of prairie wetlands. The development of this platform will allow us to address multiple questions about the effects of climate change on prairie wetlands, the species that depend on them, and the ecosystem services they provide. In particular, we want to assess: possible impacts of climate change on waterfowl populations, mediated via changing wetland extent; and, wetland-climate feedbacks at local/regional scales and possible on-farm benefits of wetland retention and restoration.

Eligibility:

The required academic background of the student: major in Atmospheric Science, Environmental Science or Mechanical, Civil, or Environmental Engineering, or equivalent; a strong background in meteorology, climatology, and/or physics. Experience with numerical modeling of atmospheric processes is a plus.

The required skills include: 1) Ability to gather, understand, and critically analyze data from all relevant sources. 2) Programming skills, such as Fortran, Matlab, R, Python, Perl, and Shell script, etc. 3) Experience with large spatial datasets (preferably using GrADS) on multiple computer platforms (Unix/Linux, Windows). 4) Highly motivated and self-directed in advancing complex projects.

How to Apply:

Interested applicants should contact Dr. Yanping Li (yanping.li@usasaks.ca) with a cover letter explaining their motivation, complete CV, and contact details for three academic references. Informal inquiries are welcome.