



Integrated Modelling Program for Canada
2nd Annual Meeting
June 12-13th, 2019
Louis' Loft, 93 Campus Drive, University of Saskatchewan, Saskatoon

This is the second annual IMPC meeting for the IMPC team to present, evaluate, and discuss their research progress and strategies for knowledge mobilization in the second year of the research program. This will be done in collaboration with the GWF core modelling team. Investigators, HQPs, the GWF core modelling team, collaborators, and representatives of various local, provincial, and national stakeholders/users are invited to attend this meeting.

Day 1: Wednesday, June 12, 2019		
8:00-8:30	Registration and Refreshments	
Theme A, Chair: Stadnyk		
8:30-8:45	Welcome, IMPC Overview, Meeting Agenda	Razavi
8:45-9:15	GIWS vision for Integrated Large Scale Modelling	Famiglietti
9:15-9:30	Global Water Futures: modelling progress, and new opportunities for international modelling and prediction	Pomeroy
9:30-9:45	GWF Core modelling Team: Progress, Challenges and Opportunities.	Pietroniro/Clark
9:45-10:00	High-resolution atmospheric modelling (A1)	Li/Lintao
10:00-10:20	Progress in model couplings for water quality & river ice modelling (A3 and A4)	Lindenschmidt
10:20-10:35	Discussion	Stadnyk/Famiglietti (moderator)
10:35-11:00	Coffee Break	
Theme A (Cont'd), Chair: Lindenschmidt		
11:00-11:15	Improving large scale models through representation of cold regions processes: advances and next steps (A2)	Pomeroy
11:15-11:30	Canadian Hydrological Model – status and prospects	Marsh
11:40-11:55	Progress with HYPE hydrological modelling	Stadnyk/Awoye
11:30-11:40	Progress with MESH/GEM-Hydro	Princz
11:55-12:05	Model inter-comparison and multi-model analysis (A5)	Mai/Tolson
12:05-12:15	Data Management in GWF: Information for Modellers	Peterson
12:15-12:30	Discussion	Lindenschmidt/Pomeroy (moderator)



12:30-13:30	Lunch Break	
Theme A (Cont'd), Chair: Mai		
13:30-13:45	Does one Distribution fit all? Proof of concept on streamflow across Canada (A6)	Elshorbagy/Zaghloul/Papalexidou
13:45-14:00	Overview of VARS-TOOL for sensitivity and uncertainty analysis (A7)	Razavi
14:00-14:45	Lightning Talks (Theme A/Core Modelling HQP)	HQPs (*see the list)
14:45-15:30	Coffee Break and Poster Follow-Up (*see posters list)	
15:30-16:00	Café table discussion	All
16:00-16:30	Café table reports	Haghnegahdar (moderator)
16:30-	Concluding Remarks, Day 1	Razavi
17:00	Dinner @ University Club	

List of Day 1 Lightning Talks (14:00-14:45, 2 minutes each)

1	Razi Sheikholeslami	<i>Advances in handling high-dimensional models and model crashes</i>
2	Nhu Do	<i>Advances in handling correlation effects between model parameters</i>
3	Amin Haghnegahdar	<i>A Multi-method Generalized Approach to Assess Sensitivity of Complex Watershed Models</i>
4	Mostofa Kamal	<i>Understanding Extreme Precipitation Characteristics over Western Canada</i>
5	Xiao Ma	<i>The Analysis of Convective Indices using Convection-Permitting Regional Climate Simulations</i>
6	André Bertoncini	<i>From the Ground to Space: An Analysis of Satellite Solid Precipitation Estimates based on Multi-technique Ground Observations.</i>
7	Zhihua He	<i>Hydrological responses in a boreal forest basin to climate and land cover changes</i>
8	Abbas Fayad	<i>Assessing the MESH Model's Ability to Simulate Mountain Snowpacks</i>
9	Zhibang Lv	<i>Assimilation of snow interception information into a cold regions hydrological model.</i>
10	Diogo Costa	<i>Hydrodynamic modelling of snowmelt flooding events and nutrient transport in the Canadian Prairies using the FLUXOS model</i>
11	Brandon Williams	<i>Calibration of an Ice Jam Flood Forecasting System for the Lower Red River, Manitoba.</i>
12	Prabin Rokaya	<i>A physically-based modelling framework for operational forecasting of river ice breakup</i>
13	Sujata Budhathoki	<i>Improving hydrological simulations in the Prairies using in-situ soil moisture information</i>
14	Luis Morales Marin	<i>Advances on water quality and river ice modelling in large-scale catchments</i>
15	Youssef Loukili	<i>Lhù'ààn Mǎn - Kluane Lake, Yukon Territory, the impending hydrological fate after Slims River piracy</i>
16	Ajay Bajracharya	<i>Analysis of Soil Moisture Accounting in Nelson Churchill River Basin using HYPE</i>
17	Hervé Awoye	<i>Hydrological modelling in the Lake Erie and Nelson-Churchill River Basins using HYPE</i>
18	Sajad Khoshnod	<i>Analysis and Prediction of Land Cover Changes (Hable-Rud, Iran)</i>
19	Julie Mai	<i>THE CUIZINART – A Tool For Automatic Subsetting of Large Gridded Datasets and Data Dissemination</i>



Posters List (Poster Session on Day 1 14:40-15:30, Day 2 15:00-16:00)

1	Razi Sheikholeslami	<i>Advances in handling high-dimensional models and model crashes</i>
2	Nhu Do	<i>Advances in handling correlation effects between model parameters</i>
3	Nhu Do	<i>Integrating water allocation models into a unified model, performance indices, and the scenario analysis tool for water supply and demand</i>
4	Amin Haghnegahdar	<i>A Multi-method Generalized Approach to Assess Sensitivity of Complex Watershed Models</i>
5	Mostofa Kamal	<i>Understanding Extreme Precipitation Characteristics over Western Canada</i>
6	Xiao Ma	<i>The Analysis of Convective Indices using Convection-Permitting Regional Climate Simulations</i>
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13	Prabin Rokaya	<i>A physically-based modelling framework for operational forecasting of river ice breakup</i>
14	Prabin Rokaya	<i>A stochastic framework for ensemble ice-jam flood modelling</i>
15	Zhaoquin Li	<i>Surface Soil Moisture Content retrieval using Multi-temporal Radarsat-2 images</i>
16	Zachary Lang	<i>Water Quality Modelling of Heavy Metals in the lower Athabasca River</i>
17	Sujata Budhathoki	<i>Improving hydrological simulations in the Prairies using in-situ soil moisture information</i>
18	Luis Morales Marin	<i>Advances on water quality and river ice modelling in large-scale catchments</i>
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22	Sajad Khoshnod	<i>Analysis and Prediction of Land Cover Changes (Hable-Rud, Iran)</i>
23	Julie Mai	<i>THE CUIZINART – A Tool For Automatic Subsetting of Large Gridded Datasets and Data Dissemination</i>
24	Mustakim Ali Shah	<i>Development and testing of water allocation models for all Saskatchewan River Sub-Basins</i>
25	Kasra Keshavarz	<i>Stochastic generation of water supply scenarios by a weather generator with perturbed weather properties</i>
26	Mohammad Ghoreishi	<i>Understanding Human Adaptation to Drought in Bow River Basin: Agent-Based Agricultural Water Demand modeling</i>
27	SuJin Kim	<i>Coupled hydrologic-operations modelling for the simulation of hydropower operations in the Lower Nelson River Basin</i>
28	Azza Mohammadiazar	<i>Harmonizing Water Resource Modeling with Indigenous ways of knowing: A Collaboration in Water Stewardship of Saskatchewan River Delta</i>
29	Venkat Bandi	<i>DSS Tool Pilot – Delta Display</i>
30	Trish Stadnyk	<i>HYPE C3S Showcase – Delta Display</i>
31	Leila Eamen	<i>The Economic Response of the Saskatchewan River Basin to Water Supply Restrictions due to Climate and Policy Change</i>



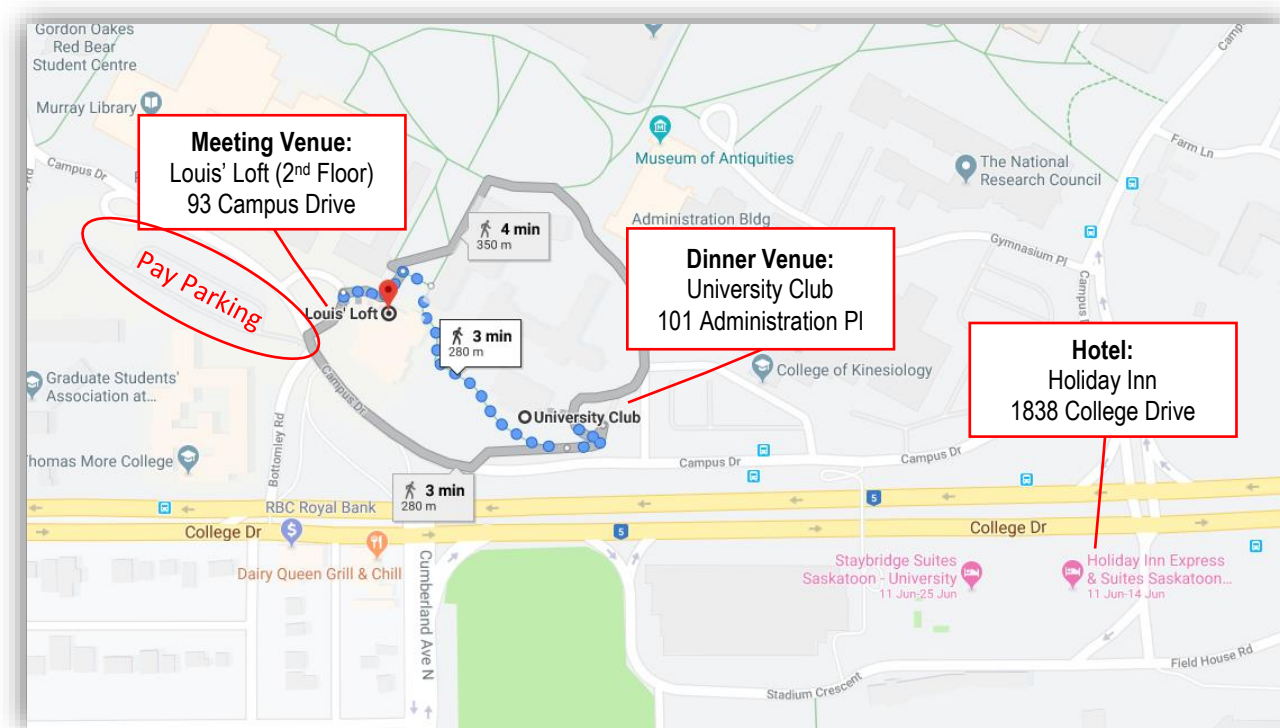
Day 2: Thursday, June 13 th , 2019		
8:00-8:30	Refreshments	
Themes B-D, Chair: Elshorbagy		
8:30-9:00	Razavi: <i>Overview of Water Resources Modelling and Challenges (B1)</i> Lightning talks: <ul style="list-style-type: none">- <i>Development and testing of water allocation models for all Saskatchewan River Sub-Basins</i> (Ali Shah)- <i>Integrating water allocation models into a unified model, performance indices, and the scenario analysis tool for water supply and demand</i> (Do)- <i>Tree-ring-based water supply scenarios for the Saskatchewan River Basin</i> (Slaughter)- <i>Stochastic generation of water supply scenarios by a weather generator with perturbed weather properties</i> (Keshavarz)- <i>Understanding Human Adaptation to Drought in Bow River Basin: Agent-Based Agricultural Water Demand modeling</i> (Ghoreishi)	Razavi Ali Shah Do Slaughter Keshavarz Ghoreishi
9:00-9:15	Future demand scenarios from policy discourse (C1)	Carlson/Gober
9:15-9:30	Web-based Decision Support System (D2)	Gutwin
9:30-9:45	Asadzadeh: <i>Water resources modelling - Manitoba (Nelson-Churchill)</i> <ul style="list-style-type: none">- <i>Coupled hydrologic-operations modelling for the simulation of hydropower operations in the Lower Nelson River Basin</i> (Kim)	Asadzadeh Kim
9:45-10:00	Discussion	Elshorbagy (moderator)
10:00-10:30	Coffee Break	
Themes B-D (Cont'd), Chair: Brouwer		
10:30-11:15	Brouwer: <i>Challenges of Model Integration and Overview of the IMPC Hydro-Economics Approach (B3)</i> <ul style="list-style-type: none">- <i>Hydro-Economic Model for the Great Lakes Basin</i> (Garcia Hernandez)- <i>Hydro-Economic Model for the Saskatchewan River Basin</i> (Eamen)- <i>Integration of Monitoring Data into a Pan-Canadian Water Quality Valuation Model</i> (Pinto)	Brouwer Garcia Hernandez Eamen Pinto
11:15-11:30	Environmental flows and hydro-ecologic metrics (B2)	Lento/Jardine
11:30-11:45	Strickert: <i>Indigenous Engagement (D1)</i> <ul style="list-style-type: none">- <i>Harmonizing Water Resources Modeling with Indigenous ways of knowing</i> (Mohammadiazar)	Strickert Mohammadiazar
11:45-12:30	Modelling Integration Plenary	Brouwer (moderator)
12:30-13:30	Lunch Break	



Management & Knowledge Mobilization, Chair: Razavi		
13:30-14:30	User Panel: Vision and Future Planning	Tollefson, Tang, Stadnyk, Renouf
14:30-14:45	User engagement and knowledge mobilization	Carlson
14:45-15:00	Project Management	Haghnegahdar
15:00-16:00	Coffee Break and Poster Follow-Up (*see posters list)	
16:00-16:30	Open Discussion and Closing Remarks, Day 2	Razavi (moderator)

Additional event logistics

- Louis' Loft is located on the second floor of the Memorial Union Building on University of Saskatchewan campus ([map](#))
- Pay parking is available in the lot south of Place Riel (label 1 on [map](#))
- Dinner on Day 1 will be provided @ University Club (a nice 3 min walk)
- Please note that parts of the meeting will be recorded for internal use and slides/posters will be available online later on IMPC webpage [here](#). Please inform us if you have any concerns in this regard.
- GIWS contact No.: (306) 966-2021, Louis' Loft (306) 966-6901.





List of Attendees (sorted by organization name)

Name	Organization	Name	Organization
Laurie Tollefson	Agriculture & Agri-Food Canada	Lintao Li	University of Saskatchewan
Tom Tang	Alberta Environment & Parks	John Pomeroy	University of Saskatchewan
Jeniffer Lento	University of New Brunswick	Kevin Shook	University of Saskatchewan
Kristin Bruce	City of Saskatoon	Chris Marsh	University of Saskatchewan
Darrin Qualman	City of Saskatoon	Diogo Costa	University of Saskatchewan
Bruce Davison	Environment & Climate Change Canada	Youssef Loukili	University of Saskatchewan
Frank Seglenieks	Environment & Climate Change Canada	André Bertoncini	University of Saskatchewan
Daniel Princz	Environment & Climate Change Canada	Peter Lawford	University of Saskatchewan
Emily Anderson	Environment & Climate Change Canada	Dominique Richard	University of Saskatchewan
Charmaine Hrynkiw	Environment & Climate Change Canada	Zhibang Lv	University of Saskatchewan
Al Pietroniro	Environment & Climate Change Canada	Chandra Rajulapati	University of Saskatchewan
Fisaha Unduche	Manitoba Infrastructure and Transportation	Abbas Fayad	University of Saskatchewan
Alain Bishoff	Northern Village of Cumberland House	Zhihua He	University of Saskatchewan
Kelvin MacKay	Northern Village of Cumberland House	Mohamed Elshamy	University of Saskatchewan
Bob Halliday	Partners for the Saskatchewan River Basin	Fuad Yassin	University of Saskatchewan
Mike Renouf	Prairie Provinces Water Board	Shervan Gharari	University of Saskatchewan
Bob Schutzman	Saskatchewan Chamber of Commerce	Elvis Asong	University of Saskatchewan
Jaret McDonald	SaskPower	Amin Haghnegahdar	University of Saskatchewan
Helen Wong	SaskPower	Saman Razavi	University of Saskatchewan
Sajad Khoshnod	University of Gorgan, Iran	Leila Eamen	University of Saskatchewan
Tricia Stadnyk	University of Manitoba	Mohammad Ghoreishi	University of Saskatchewan
Masoud Asadzadeh	University of Manitoba	Kasra Keshavarz	University of Saskatchewan
Hervé Awoye	University of Manitoba	Razi Sheikholeslami	University of Saskatchewan
SuJin Kim	University of Manitoba	Mustakim Ali Shah	University of Saskatchewan
Ajay Bajracharya	University of Manitoba	Hayley Carlson	University of Saskatchewan
Jay Famiglietti	University of Saskatchewan	Nhu Do	University of Saskatchewan
Vincent Vionnet	University of Saskatchewan	Jared Wolfe	University of Saskatchewan
Karl-Erich Lindenschmidt	University of Saskatchewan	Andrew Ireson	University of Saskatchewan
Prabin Rokaya	University of Saskatchewan	Ines Sanchez	University of Saskatchewan
Sujata Budhathoki	University of Saskatchewan	Seth Kwaku Amankwah	University of Saskatchewan
Luis Morales Marin	University of Saskatchewan	Menna Elrashidy	University of Saskatchewan
Brandon Williams	University of Saskatchewan	Helen Baulch	University of Saskatchewan
Graham Strickert	University of Saskatchewan	Chris DeBeer	University of Saskatchewan
Azza Mohammadiazar	University of Saskatchewan	Amber Peterson	University of Saskatchewan
Amin Elshorbagy	University of Saskatchewan	Nasim Hosseini	University of Saskatchewan
Mohanad Zaghloul	University of Saskatchewan	Colin Whitfield	University of Saskatchewan
Mohamed Ahmed	University of Saskatchewan	Patrick Lloyd-Smith	University of Saskatchewan
Simon Papalexiou	University of Saskatchewan	Mohamed Abdelhamed	University of Saskatchewan
Salma Hobbi	University of Saskatchewan	Corinne Schuster-Wallace	University of Saskatchewan
Carl Gutwin	University of Saskatchewan	Roy Brouwer	University of Waterloo
Ishan Saxena	University of Saskatchewan	Jorge Hernandez	University of Waterloo
Ricardo Rheeder	University of Saskatchewan	Rute Pinto	University of Waterloo
Venkat Bandi	University of Saskatchewan	Juli Mai	University of Waterloo
Yanping Li	University of Saskatchewan	John-Mark Davies	Water Security Agency
Xiao Ma	University of Saskatchewan	Curtis Hallborg	Water Security Agency
Mostofa Kamal	University of Saskatchewan	John Fahlman	Water Security Agency