IP3 MESH/CLASS Modelling Course
Wilfrid Laurier University
Waterloo, Ontario

Senate and Board Chamber
16 March 2009

Agenda

8:00-8:30	Registration	
8:30	Welcome and Introduction to IP3 Purpose and Outline/Structure of Course	John Pomeroy Al Pietroniro
9:00	Green Kenue (EnSim)	David Hutchinson
10:00	Coffee	
10:30 11:30	WATFLOOD MESH Introduction	Nick Kouwen Al Pietroniro
12:00	Lunch	
1:00 2:00 2:30	CLASS ParaMESH Database for use with MESH	Diana Verseghy Daniel Princz Vincent Fortin
3:00	Coffee	
3:30	MESH, examples	Brenda Toth, Anthony Liu, Frank Seglenieks
5:00	Course conclusion	Al Pietroniro
6:00	Reception	
7:30	Public Lecture: *Addressing interdisciplinary issues of changing water resources in mountain regions*	Martin Beniston, ACQWA

Homework for Participants:
Participants will need to bring a laptop (running Windows) to the course. Models and data are available on-line which participants will need to download and install onto their laptop prior to the course (instructions to follow).

IP3 Prediction/Theme 3 Workshop
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8:00-8:30	Registration	
8:30	Welcome	John Pomeroy
	Summary of Prediction plans from Whitehorse Workshop	Al Pietroniro
	Summary of Parameterization Workshop	Bill Quinton
	Introduction to "Themes to Teams" and today's tasks, Introduce the basin teams	Al Pietroniro
9:15	Update on lake evaporation	Raoul Granger
9:45	Basin presentations: *Data summary, RS, LiDAR, modelling history and issues*	Basin Leads – 10 minutes each
10:15	Coffee	
10:45	Continue Basin presentations	
11:45	Plenary: *Which parameterisations will be put into MESH and other models?*	Facilitator: Al Pietroniro
12:00	Lunch	
1:00	The EU-FP7 ACQWA Project – Modelling strategy	Martin Beniston
1:30	Breakout Groups* – 3 groups to address vertical and lateral processes in MESH *Focus on timeline, tasks, plans for accomplishing remaining work*	Facilitator: Frank Seglenieks
3:00	Coffee	
3:30	Report on Breakout Groups	Breakout Group leads
4:00	Next steps, Large scale simulations	Edgar Herrera, John
4:30	Planning for IP3 and beyond, including evolving prediction strategy	Pomeroy
5:00	Workshop close	Al Pietroniro

*Participants from the user community will be placed into the appropriate breakout groups to provide input to the modelling teams.

Basin Teams Presentations (9:45 AM) – Basin Lead

The research basin team presentations (10 minutes each) should be made by the Basin Lead and summarize for the modelling group what data are readily available and how you feel we should segment the basin. A list of potential required information should be highlighted in your talk.

The following basin groups and Leads have been identified:

Marsh/Pohl/Endrizzi: Trail Valley Creek, NWT, flows into the Arctic Ocean through the Eskimo Lakes system. Its area is 60 km^2 and it is primarily covered with sparse and shrub tundra and tundra ponds and is underlain by continuous permafrost.

Pomeroy/Carey/Pietroniro: Wolf Creek, Yukon, is part of the headwaters of the Yukon River near Whitehorse. Its drainage area is 195 km^2 and it has a sub-arctic climate with vegetation zones ranging from boreal forest to windswept alpine tundra. The basin is partially underlain by permafrost.

Quinton/Seglenieks: Scotty Creek, NWT, flows into the Liard River near its confluence with the Mackenzie River at Fort Simpson. It drains a broad permafrost wetland with islands of sparse woodland surrounded by open fens and flat bogs.

Spence/Granger/Seglenieks: Baker Creek, NWT, is a series of interconnected lakes draining an area of 150 km^2 north of Great Slave Lake that is typical of Canadian Shield drainage basins. The landscape is taiga woodland and boreal forest.

Pomeroy/Pietroniro: Marmot Creek, AB, feeds the Kananaskis River and the Bow River system from the Rocky Mountains. Its area is 14 km^2 and it is primarily covered with montane and sub-alpine forest with alpine tundra ridgetops. The basin has seasonally frozen soils.

Tolson/Marks: Reynolds Creek, Idaho, is a 239 km^2 drainage in the Owyhee Mountains near Boise. It was added to the USDA Agricultural Research Service watershed program in 1960.

Hayashi/Donnelly/Seglenieks: Lake O'Hara, AB, is 14 km^2 in size and ranges in elevation from 2010 to 3490 m. Three small glaciers occupy approximately 5% of the basin.

Please report on the following Data Requirements:

Essential Basin Information
Physiographic information
Landcover, Soils
Digital elevation model

Forcing Data
temperature, precipitation
incoming shortwave radiation, incoming longwave radiation
pressure, humidity, wind speed

Objective Function – Validation data
Streamflow, Soil moisture
Flux Tower
SCA, SWE

It is important to also understand your MESH model requirements. Some of this will be discussed, but you need to have some idea of the following for basin segmentation:
What are the Tiles comprised of ? What is the MESH Grid size?
What is the state of the modelling efforts for your basin?