

Multi-basin modelling using World-Wide HYPE (WWH) at the local/regional scale

THEMES:

- Improving the existing WWH model setup for a part of the world (your area of interest will be delivered by SMHI)
- Include your own data (river flow observations, catchment delineation, routing, land use, water bodies, forcing data P/T)
- Calibration strategies and stepwise parameter estimation using multi-source data (provided by SMHI)

*NOTE: You should bring your own computer and **your own data to the course** (e.g. time-series of river flow observations, catchment delineation, routing, land-cover, waterbodies, regulation/irrigation, forcing data P/T) to be able to make QA of the received model and perhaps add your own observations etc.*

Tuesday 4th of September

Room: Almagrundet

Time	Task	Lead
08:30	Registration - USB stick delivery, sign GRDC requests, Licence obligations	EB, KI, CP, JR
09:00	Welcome and introduction to HYPE, examples of HYPE applications, Open Source Community	EB, BA
09:15	The HYPE model	GL
10:15	<i>COFFEE BREAK</i>	
10:45	World-Wide HYPE - Introduction, set up, updates, performance	KI
12:00	<i>LUNCH BREAK</i>	
13:00	Introduction to received files and submodels - Details about HYPE files, WHIST files, Shapefiles	KI
13:30	HYPE: Check that everyone can run HYPE	CP, JS, RC
13:45	Basic HYPE model exercise with a very simple model - Getting familiar with the input files and how the model setup is represented by the different files	AB
15:00	<i>COFFEE BREAK</i>	
15:30	Introduction to WHIST - Start up, files, manual	KI, JR
15:45	WHIST- a few guided exercises on the course model - Get familiar with the most important tools	KI, JR
16:15 – 18:00	Individual work on either the course model or personal model - For example: Check delineation and routing, add discharge time series, check presence of lakes, add lakes to the model. Test some of the tools on your own data.	KI, JR, AB, JS, RC

Wednesday 5th of September

Time	Task	Lead
09:00	Reflections about Day1, questions	KI, GL, AB, RC, JS, JR
09:15	HYPE process description and calibration	GL
10:15	<i>COFFEE BREAK</i>	
10:30	Exercise: manual calibration of single sites and post processing with Analys Q - Using individual domains selected by participants or template model	GL, JS, RC, AB, LC
11:30	Tools: HYPE Data output files and post processing HYPE tools (R) and modelview	AB, RC
12:00	<i>LUNCH BREAK</i>	
13:00	Exercise: all tools (AnalysQ, HYPE tools, modelview)	AB, RC, DG, JS, LC
13:30	Improving large scale HYPE models through stepwise process refinement.	JA
14:30	Exercise: analysing large-scale HYPE model performance (in the individual domains selected by participants)	JA, RC, JS, AB, DG, LC
15:30	<i>COFFEE BREAK</i>	
16:00	Automatic Calibration in HYPE	JA
16:30 – 18:00	Exercise: automatic calibration in practice in the individual domains or template	JA, RC, JS, AB, DG, LC
19:00	<i>Joint dinner downtown</i>	

Thursday 6th of September

Time	Task	Lead
09:00 – 12:00	Short introduction and then individual work: using the model to explore the hydrology in the individual domains following a questionnaire: - Using the model for forecasting (LC) - Return periods for high flows and low flows (JS) - Duration curves (RC) - Plot Runoff maps etc. (RC)	RC, AB, JS, LC and others
<i>10:15</i>	<i>COFFEE BREAK</i>	
10:45 - 12:00	Continuation from the morning	RC, AB, JS, LC and others
<i>12:00</i>	<i>LUNCH BREAK</i>	
13-15	Continued individual work	ALL
<i>15:00</i>	<i>COFFEE BREAK</i>	
15:30 - 16:30	Continued individual work	ALL
16:30	Sum up - Course feedback and open discussion of potentials for the WW-HYPE community	EB, BA

Lecturers and coordinators:

AB: Dr Alena Bartosova
BA: Dr Berit Arheimer
CP: Dr Lotta Pers
DG: Dr David Gustafsson
EB: Dr Emilie Breviere
GL: Lic Göran Lindström
JA: Dr Jafet Andersson
JR: MSc Jörgen Rosberg
JS: MSc Johan Strömqvist
KI: MSc Kristina Isberg
LC: Dr Louise Crochemore
RC: Dr René Capell