

Lecturers: Peter Reichert (PR), Carlo Albert (CA), Andreas Scheidegger (AS), Dmitri Kavetski (DK)
Practice sessions and short course in R: Dario Del Giudice (DG) and David Machac (DM)

Lectures and practice sessions will take place in FC-C20, lunch in the restaurant downstairs

Sunday, June 2: Optional Preparatory Course

10:00 – 12:00	lecture	AS	Introduction to probabilities and likelihood functions
14:00 – 16:00	lecture + practice	DM	Introduction to R

Monday, June 3: Frequentist Inference

08:30 - 09:30	lecture	PR	Introduction to the Course Mathematical representation of models Construction of models, sensitivity analysis
10:00 - 11:00	lecture	CA	Frequentist inference
11:30 - 12:30	lecture	DK	Local and global optimization numerical model design and implementation
14:00 - 17:30	practice	all	Practice of sensitivity analysis and frequentist inference

Tuesday, June 4: Introduction to Bayesian Analysis

08:30 – 09:30	lecture	PR	Concepts of Bayesian analysis: Priors, updating, prediction
10:00 - 11:00	lecture	CA	Bayesian computation with Monte Carlo methods: Importance sampling, Markov chains, filters
11:30 - 12:30	lecture	DK	Simple inference/prediction methods, identifiability and diagnostics; Alternative methods for model calibration
14:00 - 17:30	practice	all	Practice of Bayesian inference / simple techniques

Wednesday, June 5: Advanced Elements of Bayesian Analysis

08:30 - 09:30	lecture	PR	Model structure uncertainty, consideration of model bias
10:00 - 11:00	lecture	CA	Adaptive MCMC sampling, Approximate Bayes Computation
11:30 - 12:30	lecture	AS	Practical aspects of Bayesian Computation
14:00 - 17:30	practice	all	Practice of Bayesian inference / advanced methods

Thursday, June 6: Outlook to Research Topics and Applications

08:30 - 09:30	lecture	DK	Hydrological modeling, uncertainty and hypothesis-testing
10:00 - 11:00	lecture	CA	Stochastic modeling and experimental design
11:30 - 12:30	lecture	PR	Emulation
14:00 - 17:30	practice	all	Practice of Bayesian inference / own problems

Friday, June 7: Discussion of Problems of the Participants

08:30 - 09:30	discussion	all	Discussion of problems of the participants
10:00 - 11:00	discussion	all	Discussion of problems of the participants
11:30 - 12:30	discussion	all	Feedback on the course
14:00 - 17:30	practice	all	Practice on subjects chosen by the participants. Note that participants wishing to leave earlier can do so