

Lecturers: Peter Reichert (PR), Carlo Albert (CA), Dmitri Kavetski (DK)
 Support of practice sessions: Anne Dietzel and Simon-Lukas Rinderknecht

Course Program

Monday, June 21

08:30 - 09:00		PR	Introduction to the course
09:00 - 09:30	lecture	PR	Importance of models Causes of uncertainty in model predictions
09:30 - 10:00	break		
10:00 - 11:00	lecture	PR	Description of uncertainty Mathematical representation of models
11:00 - 11:30	break		
11:30 - 12:30	lecture	PR	Construction of models Preliminary analysis Sensitivity analysis
12:30 - 14:00	lunch		
14:00 - 17:30	practice	all	Practice of sensitivity analysis

Tuesday, June 22

08:30 - 09:30	lecture	PR	Frequentist inference: tests, confidence regions
09:30 - 10:00	break		
10:00 - 11:00	lecture	CA	Frequentist inference: identifiability, model structure selection
11:00 - 11:30	break		
11:30 - 12:30	lecture	DK	Computational issues: Local and global optimization, numerical model design and implementation
12:30 - 14:00	lunch		
14:00 - 17:30	practice	all	Practice of frequentist inference and identifiability analysis

Wednesday, June 23

08:30 - 09:30	lecture	PR	Bayesian inference: priors, updating, prediction
09:30 - 10:00	break		
10:00 - 11:00	lecture	CA	Bayesian inference: numerics (importance sampling, Markov chain Monte Carlo)
11:00 - 11:30	break		
11:30 - 12:30	lecture	DK	Bayesian inference: hierarchical models, posterior diagnostics, identifiability, numerics
12:30 - 14:00	lunch		
14:00 - 17:30	practice	all	Practice of Bayesian inference

Thursday, June 24

08:30 - 09:30	lecture	DK	Input and structural uncertainty, outlook
09:30 - 10:00	break		
10:00 - 11:00	lecture	PR	Model bias, outlook
11:00 - 11:30	break		
11:30 - 12:30	lecture	CA	Bayesian experimental design, outlook
12:30 - 14:00	lunch		
14:00 - 17:30	practice	all	Practice of Bayesian inference / own problems

Friday, June 25

08:30 - 09:30	discussion	all	Discussion of problems of the participants
09:30 - 10:00	break		
10:00 - 11:00	discussion	all	Discussion of problems of the participants
11:00 - 11:30	break		
11:30 - 12:30	discussion	all	Feedback of participants to the course
12:30 - 14:00	lunch		
14:00 - 16:30	practice	all	Practice on subject chosen by the participants