

Summer course: applied modelling of climate-sensitive infectious disease

Program

Time slot	Session	Instructors
Day 1: Introduction		
08:30-09:00	Registration	
09:00-09:45	Welcome and Official Opening. Introduction round and logistics of the applied modelling of climate-sensitive infectious disease summer course (45min)	Joacim Rocklöv
09:45-10:30	Lecture: Introduction to climate-sensitive diseases and modelling (45min)	Joacim Rocklöv
	Coffee break	
11:00-11:45	Lecture: Introduction to climate science (and climate data) (45min)	Stella
12:00-12:45	Presentation: suggestion: Best practices for mapping climate data and map data? (overview) (45min)	Alexander Zipf , Bernhard Hofle
	Lunch	
14:00-17:00	Computer tutorial: Climate data (download, descriptive, and visualization) and vector/disease data? (3h)	Stella, Felipe, Peter (if needed)
	Reception	
Day 2: Statistical models		
09:00-10:00	Lecture: Statistical methods (e.g., Time series analysis and lag models) (60min)	Antonio Gasparrini (time series and lag models), Oliver Brady, Moritz Kraemer, Daniele Da Re
10:15-10:45	Presentation: Research example (e.g., DLNM methods) (Someone presents their research connected to the topic of the day) (one presentation 20+10min) (30min)	Prasad
	Coffee break	
11:15-12:15	Lecture: Statistical methods cont. (e.g., INLA models, Bayesian statistics,	Jonas Walin (INLA, GPs, and bayesian stats), Rachel Lowe (INLA)

	regression?, GAM?, others?) (60min)	
	Lunch	
13:15-16:15	Computer tutorial: Regression, GAM, INLA, others? (3h)	Jerome, Pascale, Prasad?
Day 3: Machine learning models		
09:00-10:00	Lecture: Methods (image recognition, neural networks) (60min)	Fred Hamprecht , Ullrich Köthe, Michael Gertz, Samir Bhatt
10:15-10:45	Presentation: Research example (Tick classification) (Someone presents their research connected to the topic of the day) (one presentation 20min+10min) (30min)	Najmeh Abiri , Yichao
	Coffee break	
11:15-12:15	Lecture: Methods cont. (e.g. tree-based models, XGboost, others?) (60min)	Ullrich Köthe , Michael Gertz?
	Lunch	
13:15-16:15	Computer tutorial: Methods presented during the morning talks (e.g., XGboost tutorial, others?) (3h)	Michael, Yichao, Peter
	Social event	
Day 4: Process based models		
09:00-10:00	Lecture: Overview of methods and mathematical framework [ODE+SIR, PDE?, IBM?, other types of models?] (60min)	Åke Brännström , Giovanni Marini, Oliver Brady, Moritz Kraemer
10:15-10:45	Presentation: Research example (Someone present their research connected to the topic of the day) (one presentations 20min+10min) (30min)	Julian
	Coffee break	
11:15-12:15	Lecture: Methods (<i>more in-depth talk</i>) (ODE models, (mosquito/host) population dynamics, R0 from <i>next-generation matrix</i> etc.) (45min)	Åke Brännström , Ekaterina Kostina, Daniele Da Re, Giovanni Marini, Oliver Brady, Moritz Kraemer?
	Lunch	
13:15-16:15	Computer tutorial: Process-based models (3h)	Julian, Pratik, Erin Stafford, Sumet
Day 5: Outlook		
09:00-09:45	Lecture: Interventions (and application of models?) (45min)	Marina

10:00-10:45	Lecture: New data streams, citizen science, challenges (45min)	Joacim Rocklöv
11:00-11:30	Outlook + Closing (30min)	Joacim Rocklöv
11:30-13:00	Networking + Lunch	