

Hausdorff School  
“Inverse problems for multi-scale models”

August 22 - 26, 2022

organized by  
Lorenzo Contento, Jan Hasenauer, Yannik Schälte

• Monday, August 22

08:30 - 09:00	<i>Arrival and Self-Registration</i>
09:00 - 09:45	<b>Linda Petzold</b> <i>Roles and consequences of stochasticity in biological systems</i>
09:45 - 10:30	<b>Christiane Fuchs</b> <i>Mathematical introduction to stochastic modelling (MJP, SDE, ODE)</i>
10:30 - 11:00	<i>Coffee break</i>
11:00 - 11:45	<b>Stefan Engblom</b> <i>Moment equations &amp; linear noise approximation</i>
11:45 - 12:30	<b>Linda Petzold</b> <i>Algorithms for Discrete Stochastic Simulation of Biochemical Systems</i>
12:30 - 14:00	<i>Lunch break</i>
14:00 - 15:00	<b>Brian Drawert</b> <i>Simulation in StochSSLive!</i>
15:00 - 16:00	<i>Selected talks from the participants</i>
16:00 - 16:30	<i>Coffee break</i>
16:30 - 18:00	<i>Poster session I</i>
18:00 -	<i>Conference reception</i>

• Tuesday, August 23

09:00 - 09:45	<b>Andreas Hellander</b> <i>Introduction to mathematical modelling of spatial and multi-scale processes</i>
09:45 - 10:30	<i>TBA</i>
10:30 - 11:00	<i>Coffee break and Group Photo</i>
11:00 - 11:45	<b>Brian Drawert</b> <i>Dissipative particle dynamics for spatial stochastic simulation</i>

11:45 - 12:30	<b>Stefan Engblom</b> <i>Stochastic modeling for the single cell and the cell population</i>
12:30 - 14:00	<i>Lunch break</i>
14:00 - 15:00	<b>Brian Drawert</b> <i>Spatial simulation in StochSSLive!</i>
15:00 - 16:00	<i>Selected talks from the participants</i>
16:00 - 16:30	<i>Coffee break</i>
16:30 - 18:00	<i>Poster session II</i>

• **Wednesday, August 24**

09:00 - 09:45	<b>Christiane Fuchs</b> <i>Introduction to Bayesian inference</i>
09:45 - 10:30	<b>Jan Hasenauer</b> <i>Inference for Markov-jump processes</i>
10:30 - 11:00	<i>Coffee break</i>
11:00 - 11:45	<b>Christiane Fuchs</b> <i>Inference for SDEs</i>
11:45 - 12:30	<b>Dennis Prangle</b> <i>Variational Inference for SDE</i>
12:30 - 14:00	<i>Lunch break</i>
14:00 -	<i>Social event</i>

• **Thursday, August 25**

09:00 - 09:45	<b>Dennis Prangle</b> <i>Introduction to likelihood-free inference</i>
09:45 - 10:30	<b>Dennis Prangle</b> <i>Supporting methodology for likelihood-free inference</i>
10:30 - 11:00	<i>Coffee break</i>
11:00 - 11:45	<b>Andreas Hellander</b> <i>Neural networks for likelihood-free inference</i>
11:45 - 12:30	<i>Discussion round on machine learning in/for statistical inference</i>
12:30 - 14:00	<i>Lunch break</i>
14:00 - 15:00	<b>Andreas Hellander</b> <i>Inference in StochSSLive!</i>
15:00 - 16:00	<i>Discussion round</i>
16:00 - 16:30	<i>Coffee break</i>
16:30 - 18:00	<i>Discussion round</i>

• **Friday, August 26**

09:00 - 09:45	<b>Stefan Engblom</b> <i>COVID-19 monitoring and prediction</i>
09:45 - 10:30	<b>Linda Petzold</b> <i>Cell Polarization and Growth</i>
10:30 - 11:00	<i>Coffee break</i>
11:00 - 11:45	<b>Andreas Hellander</b> <i>Towards smart systems for model exploration</i>
11:45 - 12:30	<b>Yannik Schälte</b> <i>(py)ABC: it's easy</i>
12:30 - 14:00	<i>Lunch break</i>
14:00 - 15:00	<b>Emad Alamoudi</b> <i>FitMultiCell</i>
15:00 - 16:00	<i>Discussion round</i>
16:00 - 16:30	<i>Coffee break</i>
16:30 - 18:00	<i>Discussion round</i>