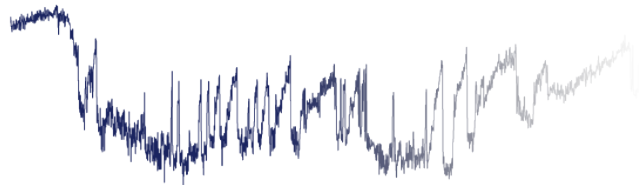


Critical Transitions in Complex Systems

Mathematical theory and applications

1st CRITICS Workshop and Summer School, Kulhuse, Denmark



PROGRAMME

September 4 - September 9



Sunday 4 September

9:00-19:00 Arrivals and reception

19:00-21:00 Dinner

Monday 5 September

9:00-9:45 *Henk Dijkstra* Collapse of the Atlantic Overturning

9:45-10:30 *Sebastian Bathiany* On the possibility and predictability of rapid Arctic winter sea-ice loss

10:30-11:00 Coffee break

11:00-11:25 *Kevin Bulthuis* Instability and abrupt changes in marine ice sheet behaviour

11:25-11:50 *Deniz Eroglu* A solar variability driven monsoon seesaw: switching relationships of the Holocene East Asian-Australian summer monsoons

11:50-12:30 Discussion time

12:30-14:00 Lunch

14:00-14:45 *Egbert van Nes* Overview of applications of resilience indicators

14:45-15:10 *Martin Rypdal* Early-warning signals for tipping points in strongly driven systems with many characteristic time scales

15:10-15:30 Coffee break

15:30-16:30 Short presentation of posters

16:30-19:00 Poster session

19:00-20:00 Dinner

Tuesday 6 September

9:00-9:40 *Manfred Mudelsee* Critical Statistical Tools for Analysing Critical Transitions

9:40-10:05 *Boumediene Hamzi* Kernel Methods for Seizure Detection

10:05-10:35 Coffee break

10:35-11:20 *Peter Imkeller* Model selection for paleo-climatic time series: stable and fractional noise

11:20-11:45 *Frank Kwasiok* Quantifying the likelihood of meridional overturning circulation collapse using non-stationary data-driven modelling

12:00-13:00 Lunch

13:00-20:00 Excursion with conference dinner



Wednesday 7 September			
9:00-9:45	<i>Martin Rasmussen</i>		Bifurcations of set-valued and random dynamical systems
9:45-10:10	<i>Maximilian Engel</i>		Bifurcation Analysis of a Stochastically Driven Limit Cycle
10:10-10:50	<i>Ilya Pavlyukevich</i>		Metastability, stochastic resonance, and heavy tails
10:50-11:15	Coffee break		
11:15-12:00	<i>Tobias Jäger</i>		Fold bifurcations, external forcing and early-warning signals: A case study
12:00-12:40	<i>Christian Pötzsche</i>		Nonautonomous Bifurcations: The Deterministic Case
12:40-13:00	Discussion time		
13:00-15:15	Lunch		
14:00-14:30	CRITICS meeting	Students	CRTICS Students only
14:30-15:15	Steering meeting	committee	CRITICS steering committee only
15:15-16:00	<i>Anna Maria Cherubini</i>		A Study in Random Dynamical Systems with Application to Stochastic Resonance
16:00-16:25	<i>Yuzuru Sato</i>		Anomalous diffusion in random dynamical systems
16:25-16:45	Coffee break		
16:45-17:30	<i>Michel Crucifix</i>		From conceptual to GCMs: The road to synthesis?
17:30-17:55	<i>Anna von der Heydt</i>		State-dependence of climate sensitivity: Attractor constraints and palaeoclimate regimes
17:55-18:25	<i>Peter Ditlevsen</i>		The Middle Pleistocene transition as a generic bifurcation on a slow manifold
19:00-20:00	Dinner		

Thursday 8 September			
9:00-9:45	<i>Rafael Obaya</i>		Pullback, forward and chaotic dynamics in non-autonomous differential equations
9:45-10:25	<i>Carmen Núñez</i>		The Yakubovich frequency theorem
10:25-11:00	Coffee break		
11:00-11:25	<i>Iacopo Paolo Longo</i>		Topological Dynamics for non-autonomous differential equations of Carathodory type with applications
11:25-11:50	<i>Ismael Maroto</i>	Ca-	Exponential stability for nonautonomous functional differential equations with state dependent delay. Applications to neural networks
11:50-12:30	Discussion time		
12:30-14:00	Lunch		
14:00-14:45	<i>Anthony Quas</i>		Impediments to mixing in forced dynamical systems
14:45-15:30	<i>Mary Silber</i>		Vegetation patterns in mathematical models, and vegetation patterns in the Horn of Africa
15:30-15:50	Coffee break		
15:50-16:35	<i>Keith Briggs</i>		Phase transitions in communications systems
16:35-17:00	<i>Erik Bollt</i>		Information Flow and Information Fragility as a Pre-Warning of Transitions in Complex Systems
19:00-20:00	Dinner		



Friday 9 September		
9:00-9:45	<i>Peter Ashwin</i>	Critical transitions and pullback attractors
9:45-10:30	<i>Sebastian Wieczorek</i>	Rate-induced tipping and invariant manifolds
10:30-11:00	Coffee break	
11:00-11:40	<i>Christian Kühn</i>	Critical transitions in multiscale dynamics
11:40-12:10	<i>Jeroen Lamb</i>	On a pitchfork bifurcation in a (simple) random dynamical system
13:00-14:30	Lunch/Departure	

contact

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