

## Schedule for „SOLSTICE 2019“

### Monday, July 15

Time		Chair
8.00-9.15	<i>registration</i>	
9.15-9.30	<i>opening</i>	
9.30-10.10	A. Lesne: Topological determinants of excitation propagation and self-sustained activity on excitable networks	R. Merks (9.30-12.45)
10.15-10.45	COFFEE	
10.45-11.25	N. Ganguly: NeVAE: A Deep Generative Model for Molecular Graphs	
11.30-12.20	Session 1 „Networks“: <ul style="list-style-type: none"> <li>• 11.30-11.55 D. Grzelak: Bigraphical meta-modeling of fog computing-based systems</li> <li>• 11.55-12.20 M. Lepek: Process of network fragmentation – inverting rules of aggregation</li> </ul>	
12.20-14.00	LUNCH	
14.00-14.40	R. Merks: Mathematical modeling of mechanical signaling in biological development	A. Lesne (14.00-17.45)
14.45-16.00	Session 2 „Networks“: <ul style="list-style-type: none"> <li>• 14.45-15.10 Sz. Horvát: Exact random sampling of connected graphs with a given degree sequence</li> <li>• 15.10-15.35 E. L. Patel: What is the optimal railway network?</li> <li>• 15.35-16.00 E. Remy: Isometries of the hypercube: a tool for logical regulatory networks analysis</li> </ul>	
16.00-16.30	COFFEE	
16.30-17.45	Session 3 „Modelling“: <ul style="list-style-type: none"> <li>• 16.30-16.55 S. A. Kalkhouran: Event-based model for digital oscillators</li> <li>• 16.55- 17.20 M. Krellner: Pleasing can improve indirect reciprocity under the hard condition of private, noisy and incomplete information</li> <li>• 17.20-17.45 M. Loidolt: Unstructured input enhances sequence memory in recurrent model of cortex through spike-timing dependent plasticity</li> </ul>	
18.00	SNACKS AND DRINKS	
19.00-21.00	Conference concert by DHUN	

## Schedule for „SOLSTICE 2019“

**Tuesday, July 16**

Time		Chair
9.30-10.10	J. Müller: Population genetics and democratic elections	D.Makowiec (9.30-12.45)
10.15-10.45	COFFEE	
10.45-11.25	T. O. Roth: From pixelsex to mathematical socialism – confronting cellular automata with real (artistic) live	
11.30-12.45	Session 4 „Cellular automata“: <ul style="list-style-type: none"> <li>• 11.30-11.55 R. Hoffmann: Forming point patterns by a probabilistic cellular automata rule</li> <li>• 11.55-12.20 M. Redeker: Number-conserving cellular automata in one dimension</li> <li>• 12.20-12.45 B. Wolnik: The split-and-perturb decomposition of number-conserving cellular automata</li> </ul>	
12.45-14.00	LUNCH	
14.00-15.15	Session 5 „Reflexions on discrete models“: <ul style="list-style-type: none"> <li>• 14.00-14.25 J. Mimkes: The known (ex ante) and the unknown (ex post) - the common structure of science in nature, technology, economics and society</li> <li>• 14.25-14.50 A. Dzedzej: Generating multi-state reversible and number-conserving cellular automata</li> <li>• 14.50- 15.15 M. Dembowski: An exploration of two-dimensional affine continuous cellular automata rules solving the fixed-size density classification problem</li> </ul>	J. Müller (14.00-17.00)
15.15-15.45	COFFEE	
15.45-17.00	Session 6 „Diversity of Complex systems“: <ul style="list-style-type: none"> <li>• 15.45-16.10 J. Baron: Non-Markovian effects in discrete, individual-based reaction systems</li> <li>• 16.10- 16.35 M. Mrowiński: Evolution of artificial living creatures with Cartesian Genetic Programming</li> <li>• 16.35-17.00 M. Sengupta: Generating non-linear codes for multi-bit symbol error correction using cellular automata</li> </ul>	
18.00	Conference barbecue (incl. vegetarian options)	

## Schedule for „SOLSTICE 2019“

Wednesday, July 17

Time		Chair
9.30-10.10	T. Geisel: Neuronal Networks as Discrete Dynamical Systems and Dynamical Mechanisms of Information Routing in the Brain	N. Ganguly (9.30-12.45)
10.15-10.45	COFFEE	
10.45-11.25	M. Timme: Future mobility : self-organization, inefficiencies and paradoxa	
11.30-12.20	Session 7 „Collective phenomena“: <ul style="list-style-type: none"> <li>• 11.30-11.55 E. Gavagnin: Multiple scale phenomena in cell populations with realistic cell cycle time distributions</li> <li>• 11.55-12.20 M. Bahadorian: Collective sensing of dynamic signal in cell communities</li> </ul>	
12.20-14.00	LUNCH	
14.00-15.15	Session 8 „Medical models“: <ul style="list-style-type: none"> <li>• 14.00-14.25 D. Makowiec: Timed automata in modeling of atrial electrophysiology</li> <li>• 14.25-14.50 D. Wejer: A discrete model of interactions between the respiratory and cardiovascular systems</li> <li>• 14.50-15.15 S. Syga: A new lattice-gas cellular automaton model explains plasticity of breast cancer invasion</li> </ul>	E. Gavagnin (14.00-17.00)
15.15-15.45	COFFEE	
15.45-17.00	Session 9 „Cellular systems“: <ul style="list-style-type: none"> <li>• 15.45-16.10 A. Krawiecki: Ferromagnetic and spin-glass-like transitions in nonequilibrium models with locally competing temperatures</li> <li>• 16.10-16.35 J. M. Nava Sedeño: Pattern formation, condensation, and swarming of polar and nematic-aligning particles</li> <li>• 16.35-17.00 H. Hatzikirou: On a theory of cell decision-making in multicellular systems: the least microenvironmental uncertainty principle</li> </ul>	
17.00	Conference end	