

# Dagstuhl Seminar on the Network Calculus

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**Tuesday, April 2**

Time	Session	Topics	Chair
07:30-08:45		Breakfast	
09:00-09:30		Welcome and general introduction	Markus
09:30-10:30	S1: 60 min	<b>One minute madness</b> , introduction of participants, expectations (1 min each)	Markus
10:30-11:00		Coffee	
11:00-12:00	S2: 60 min	<b>Algebra, core theory</b> <ul style="list-style-type: none"> <li>• <b>Stéphane Gaubert</b>: Tropical geometry and piecewise-linear dynamical systems applied to the dimensioning of emergency call center</li> <li>• <b>Almut Burchard</b>: Dynamics of Energy Storage Systems with Self Discharge</li> </ul>	Anne
12:15-13:30		Lunch	
14:00-15:30	S3: 90 min	<b>Performance metrics, age-of-information</b> <ul style="list-style-type: none"> <li>• <b>Amr Rizk</b>: Time-stationary and Event-based Age-of-Information: A Palm calculus bridge</li> <li>• <b>Mahsa Noroozi</b>: Statistical Age-of-Information Bounds for Parallel Systems</li> <li>• <b>Samarjit Chakraborty</b>: Synthesizing Controller Schedules Using Families of Weakly-Hard Timing Constraints</li> </ul>	Markus
15:30-17:15	S3: 105 min	<b>Group work</b> : min. 4 to 5 groups <ul style="list-style-type: none"> <li>• Open questions in core theory</li> <li>• New directions</li> <li>• Potential (future) applications</li> <li>• Adaptive service curves, etc.</li> </ul>	Jörg
	including	Coffee	
17:15-17:45	S4: 30 min	<b>Feedback from group work</b> <b>Identification of future topics</b>	Jörg
18:00-19:15		Dinner	
Evening		<b>Social gathering, network calculus quiz</b>	Markus

## Wednesday, April 3

Time	Session	Topic	Chair
07:30-08:45		Breakfast	
09:00-11:00	S5: 120 min	<b>Systems 1: TSN, DetNet, URLLC</b> <ul style="list-style-type: none"> <li>• <b>Jean-Yves Le Boudec:</b> Time Sensitive Networks and Network Calculus</li> <li>• <b>Lisa Maile:</b> Decentralized Reservation Protocols in Time-Sensitive Networking: Applying Network Calculus Without Central Network Overview</li> <li>• <b>Anaïs Finzi:</b> Impact of AS6802 Synchronization Protocol on Time-Triggered and Rate-Constrained traffic</li> </ul>	Markus
11:00-11:25		Coffee	
11:25-12:00	S6: 30 min	<b>Congestion Control, Modelling</b> <ul style="list-style-type: none"> <li>• <b>Mina Tahmasbi Arashloo:</b> Toward Formally Verifying Congestion Control Behavior</li> </ul>	Anne
12:15-13:30		Lunch	
14:00-14:30	S6: 30 min	<b>Congestion Control, Modelling</b> <ul style="list-style-type: none"> <li>• <b>Harvinder Lehal:</b> Network Calculus Characterization of Congestion Control for Time-Varying Traffic</li> </ul>	Anne
14:30-15:00	S7: 30 min	<b>Algorithms and Tools</b> <ul style="list-style-type: none"> <li>• <b>Anne Bouillard:</b> Quasi-deterministic burstiness for periodic and independent flows</li> </ul>	Steffen
15:00-16:30		Coffee, Group Picture, Hike	
16:30-18:00	S7: 90 min	<b>Algorithms and tools</b> <ul style="list-style-type: none"> <li>• <b>Stéphan Plassart:</b> Equivalent versions of total flow analysis and Saihu tool</li> <li>• <b>Raffaele Zippo:</b> Improving Algorithms and Software for DNC</li> <li>• <b>Ludovic Thomas:</b> Factors Limiting the Modularity of xTFA</li> </ul>	Steffen
18:00-19:15		Dinner	

## Thursday, April 4

Time	Session	Topic	Chair
07:30-08:45		Breakfast	
09:00-10:00	S8: 60 min	<b>Systems 2: Wireless, Parallel Systems</b> <ul style="list-style-type: none"><li>• <b>Yuming Jiang</b>: Towards a Calculus for Wireless Networks: What's Next?</li><li>• <b>Brenton Walker</b>: Performance and Scaling of Parallel Systems with Blocking Start and/or Departure Barriers</li></ul>	Markus
10:00-10:30		Coffee	
10:30-12:00	S9: 90 min	<b>Topology</b> <ul style="list-style-type: none"><li>• <b>Peng Xi</b>: dMAPAR-HMM: Reforming Traffic Model for Improving Performance Bound with Stochastic Network Calculus</li><li>• <b>Vlad Constantin</b> and <b>Anja Hamscher</b>: Exploiting Minimal Arrival Curves to Deal with Negative Service Curves</li></ul>	Steffen
12:00-12:15		<b>Farewell</b>	
12:15-13:30		Lunch	