

# Dagstuhl-24411: New tools in Parameterized Complexity: Paths, Cuts, and Decompositions

October 07-11, 2024

## Schedule

	Monday	Tuesday	Wednesday	Thursday	Friday
08:45-09:00	Introductions				
09:00-10:00	Dániel Marx	Michał Pilipczuk	Euiwoong Lee	Tuukka Korhonen	Jie Xue
Coffee break: 10:00-10:30					
10:30-11:00	Éric Colin de Verdière	Michał Włodarczyk	Saranurak Thatchaphol	Eunjung Kim	Christian Komusiewicz
11:00-11:30	Éric Colin de Verdière (contd.)	Joseph Cheriyan	Saranurak Thatchaphol (contd.)	Édouard Bonnet	Erik Jan van Leeuwen
11:30-12:00	Bingkai Lin	Magnus Wahlström	Aditya Anand	M S Ramanujan	(possibility of a spontaneous talk)
Lunch: 12:15-13:00					
Research/free time: 13:00-15:30					
Cake break: 15:30-16:00					
16:00-17:00	Open problems session (contd.)	Daniel Lokshtanov		Giannos Stamoulis	
17:00-17:30	Open problems session (contd.)	Jesper Nederlof		Vaishali Surianarayanan	
17:30-18:00	Open problems session (contd.)	Open problems session (contd.)		Stefan Szeider	

## Talk titles

Monday.

1. Dániel Marx: Cuts, Paths and Decomposition
2. Éric Colin de Verdière: Topological Methods for Graph Algorithms: (Multi-)Cuts on Surface-Embedded Graphs
3. Bingkai Lin: Parameterized Inapproximability Hypothesis under Exponential Time Hypothesis

Tuesday.

1. Michał Pilipczuk: Minor Containment and Disjoint Paths in almost-linear time
2. Michał Włodarczyk: Planar Disjoint Paths, Treewidth, and Kernels
3. Joseph Cheriyan: Algorithms for 2-Connected Network Design and Flexible Steiner Trees with a Constant Number of Terminals
4. Magnus Wahlström: Determinantal Sieving
5. Daniel Lokshtanov: Efficient Approximation of Hypertree Width
6. Jesper Nederlof: A Subexponential Time Algorithm for Makespan Scheduling of Unit Jobs with Precedence Constraints

Wednesday.

1. Euiwoong Lee: Approximating Small Sparse Cuts
2. Thatchaphol Saranurak: Isolating cuts and applications
3. Aditya Anand: Unbreakable decompositions in close-to-linear time

Thursday.

1. Tuukka Korhonen: Linear-Time Algorithms for k-Edge-Connected Components, k-Lean Tree Decompositions, and More
2. Eunjung Kim: Twinwidth I
3. Édouard Bonnet: Twinwidth II
4. M S Ramanujan: Parameterized Streaming
5. Giannos Stamoulis: Planar Disjoint Shortest Paths is Fixed-parameter Tractable
6. Vaishali Surianarayanan: Parameterized Approximation for Capacitated d-Hitting Set with Hard Capacities
7. Stefan Szeider: Explainable AI (directions)

Friday.

1. Jie Xue: New developments in Parameterized Computational Geometry
2. Christian Komusiewicz: The Parameter Report: An Orientation Guide for Data-Driven Parameterization
3. Erik Jan van Leeuwen: Framework for H-Subgraph-Free Graphs and Beyond