

Dagstuhl Seminar 13121: Bidimensional Structures: Algorithms, Combinatorics and Logic

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Program

(keynote talks are underlined)

Monday, March 18

09:00–09:15 A welcome to Dagstuhl

09:15–09:30 Dimitrios M. Thilikos: *A welcome to treewidth*

09:30–**Saket Saurabh**: *Bidimensionality and its applications (part I)*

–11:00 **Daniel Lokshtanov**: *Bidimensionality and its applications (part II)*

11:00–11:30 Break

11:30–12:00 **Gwenaël Joret**: *Treewidth and dimension*

12:15 Lunch

15:00–15:40 **Reinhard Diestel**: *Canonical tree-decompositions, k -blocks and tangles*

15:45–16:30 Cake

16:30–17:00 **Erik Jan van Leeuwen**: *Subexponential-time parameterized algorithm for Steiner Tree on planar graphs*

17:00–18:00 Open Problem Session:

Tuesday, March 19

09:00–10:00 **Marek Cygan:** Rank based algorithms for bounded treewidth graphs

10:00–10:30 Break

10:30–11:00 **Victor Dalmau** *Decomposing quantified conjunctive (or disjunctive) formulas*

11:00–11:30 **Illya V. Hicks** *TBA*

11:30–12:00 **Hans L. Bodlaender** *A 5-approximation for treewidth using linear time, single exponential in the treewidth*

12:00 **Photo!** *in front of the Chapel*

12:15 Lunch

15:00–15:45 **Erik Demaine:** Contraction Decomposition: a new technique for H -minor-free graphs

15:45–16:30 Cake

16:30–17:00 **Michał Pilipczuk:** *Topological problems in tournaments*

17:00–17:30 **Felix Reidl** *Kernelization using structural parameters on sparse graph classes*

Wednesday, March 20

09:00–10:00 **Paul Wollan:** *A new proof for the weak-structure theorem with explicit constants*

10:00–10:30 Break

10:30–11:00 **Rajesh Chitnis** *Approximability and fixed parameter algorithms: a new look*

11:00–11:30 **Sang-Il Oum:** *Excluded vertex-minors for graphs of linear rank-width at most k*

11:30–12:00 **Janos Makowski:** *Definability of numerical graph parameters and various notions of width*

12:15 Lunch

Thursday, March 21

09:00–10:00 **Dániel Marx:** *The k -disjoint paths problem in directed planar graphs*

10:00–10:30 Break

10:30–11:00 **Paul Bonsma:** *Surface split decompositions: fast dynamic programming over branch decompositions for graphs of bounded genus*

11:00–11:30 **Guy Kortsarz:** *Tools for multicoloring with applications to planar graphs and bounded treewidth graphs*

11:30–12:00 **Iyad A. Kanj:** *What makes normalized weighted satisfiability tractable?*

12:15 Lunch

15:30–17:00 Cake

17:00–18:00 Open Problem Session:

Friday, March 22

09:00–10:00 **Stephan Kreutzer:** *An excluded grid theorem for digraphs with forbidden minors*

10:00–10:30 Break

10:30–11:00 **Archontia Giannopoulou:** *Exclusion theorems for immersions on surface embedded graphs*

11:00–11:30 **Yusuke Kobayashi:** *Packing edge-disjoint odd S -cycles in 4-edge-connected graphs*

11:30–12:00 **Frédéric Mazoit:** *Tree-width of hypergraphs and surface duality*