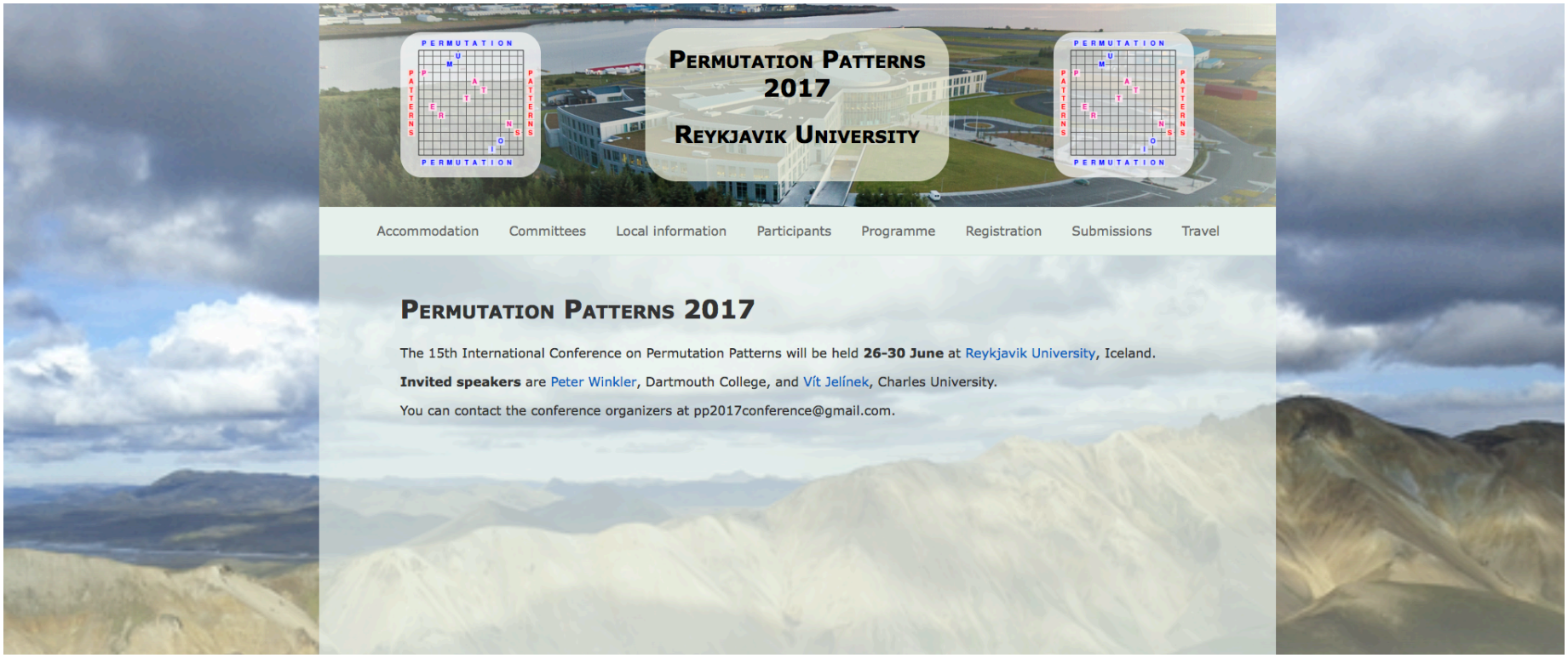
Welcome to the mini-symposium "Patterns in permutations and words"!

Programme

1.45 – 1.50	Introduction
1.50 – 2.20	**Vincent Vajnovszki** *The equidistribution of some descent set based statistics on words*
2.25 – 2.55	**Jeff Remmel** *Block Patterns in Generalized Euler Permutations and the Generalized Cluster Method*
3.30 – 4.00	**Alexander Burstein** *Unimodal inversion sequences and pattern-avoiding classes*
4.05 – 4.35	**Bruce Sagan** *Descent and peak polynomials*
4.40 – 5.00	**David Bevan** (contributed talk) *Prolific permutations and permuted packings*

The latest conference on Permutation Patterns



All conferences on Permutation Patterns

- PP 2015, held at De Morgan House in London, England
  Plenary speakers: Bruce Sagan and Peter Cameron.
  Special Issue: *Discrete Mathematics and Theoretical Computer Science.*

- PP 2014, held at East Tennessee State University, Johnson City, Tennessee
  Plenary speakers: Sergey Kitaev and Carla Savage.
  Special Issue: *Australasian Journal of Combinatorics* **64 (1),** 2016.

- PP 2013, held at the University of Paris 7 Denis Diderot, Paris, France
  Plenary speakers: Sergi Elizalde and Stéphane Vialette.
  Special Issue: *Journal of Combinatorics* **6 (1-2)**, 2015.

- PP 2012, held at the University of Strathclyde, Glasgow, Scotland
  Plenary speakers: Vince Vatter.
  Special Issue: *Pure Mathematics and Applications* **24 (2)**, 2013.

- PP 2011, held at California Polytechnic State University, San Luis Obispo, California
  Plenary speakers: Igor Pak and Jeff Remmel.
  Special Issue: *Pure Mathematics and Applications* **23 (3)**, 2012.

- PP 2010, held at Dartmouth College in Hanover, New Hampshire, USA
  Plenary speakers: Nik Ruškuc and Richard Stanley
  Special Issue: *Pure Mathematics and Applications* **22 (2)**, 2011.

- PP 2009, held at the University of Florence in Florence, Italy
  Plenary speaker: Einar Steingrímsson
  Special Issue: *Pure Mathematics and Applications,* **21 (2)**, 2010.

- PP 2008, held at the University of Otago in Dunedin, New Zealand
  Plenary speaker: Mireille Bousquet-Mélou
  Special Issue: *Annals of Combinatorics* **14(1)**, 2010.

- PP 2007, held at the University of St. Andrews in St. Andrews, Scotland
  Plenary speakers: Mike Atkinson and Martin Klazar
  Special Issue: Permutation Patterns, LMS Lecture Note Series **376**, 2010.

- PP 2006, held at Reykjavik University in Reykjavik, Iceland
  Plenary speaker: Michael Albert
  Special Issue: *Annals of Combinatorics* **11 (3–4)**, 2007.

- PP 2005, held at the University of Florida in Gainesville, Florida
  Plenary speaker: Doron Zeilberger
  Special Issue: : *Advances in Applied Mathematics* **36 (2)**, 2006.

- PP 2004, held at Malaspina University-College in Nanaimo, British Columbia, Canada
  Plenary speakers: Miklós Bóna and Gabor Tardos

- PP 2003, held at the University of Otago in Dunedin, New Zealand
  Plenary speaker: Herbert Wilf
  Special Issue:: *Electronic Journal of Combinatorics* **9 (2)**, 2002–2003.

Permutation patterns at the University of Strathclyde

PERMUTATION PATTERNS 2012

University of Strathclyde, June 11–15

>>> Call for Papers: PP2012 Special Volume <<<

The tenth annual conference on Permutation Patterns 2012 will be hosted by the Strathclyde Combinatorics Group and the Department of Computer and Information Sciences at the University of Strathclyde in Glasgow, Scotland. To be precise, the venue is

McCance 3
McCance Building (Enter from Richmond Street)
16 Richmond Street
Finance Office
Glasgow G1 1XQ

The Strathclyde Combinatorics Group is best known for its contributions to the area of permutation patterns

The Strathclyde Combinatorics Group

People

Faculty

Dr David Bevan
Dr Sergey Kitaev
Prof Einar Steingrímsson

Honorary Senior Lecturer

Dr Mark Dukes

Research Associates

Dr Thomas Selig
Dr Jason Smith

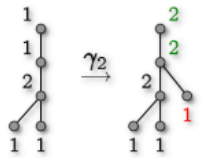
PhD Students

Marc Glen

Previous members of the group can be found here

Research

The group's research interests are in enumerative, bijective, algebraic and topological combinatorics, with connections to theoretical computer science, physics and graph theory. Much of our work has been connected to permutation patterns, a relatively young but very active research area, with several hundred papers published in the last ten years and several distinct lines of research emerging lately.



A recurring theme in much of our work is to find connections between families of different combinatorial structures, in the form of bijections that send a set of statistics on one side to a set of statistics on the other. Such statistics-preserving bijections often reveal previously unknown properties of the structures being studied.

<More about our research>

Current Research Funding

- EPSRC grant: New Combinatorial Perspectives on the Abelian Sandpile model
  Principal Investigator: Einar Steingrímsson
  Co-PI: Mark Dukes
  Amount: £ 354,000
  Funding period: 2015 to 2018

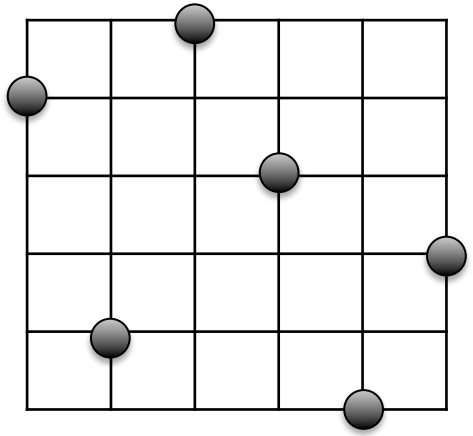
- EPSRC grant: The Möbius function of the poset of permutations
  Principal Investigator: Einar Steingrímsson
  Amount: £ 356,000
  Funding period: 2015 to 2018

Publications

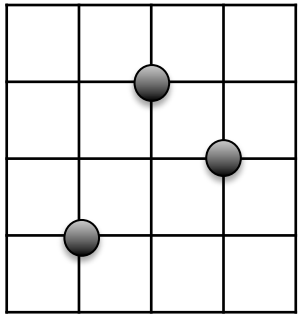
For papers and preprints please visit the individual members' websites.

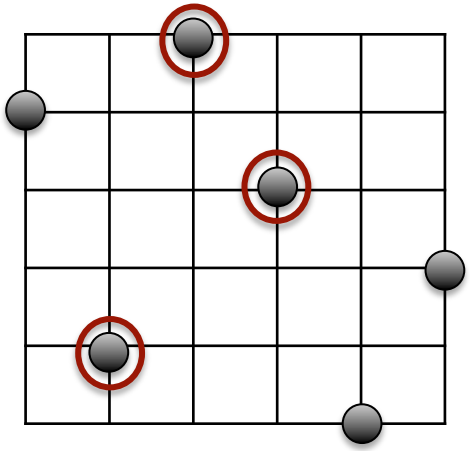
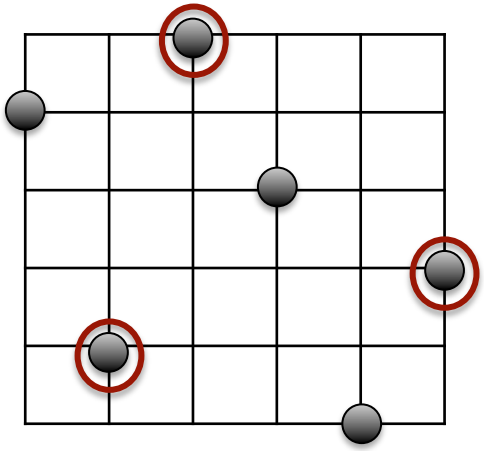
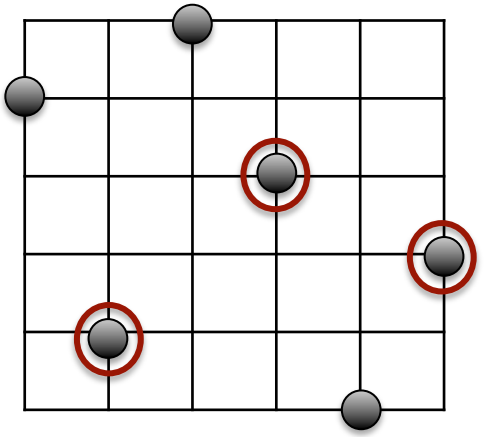
What is a pattern?

- Permutations are often considered in one-line notation, e.g. 526413
- The corresponding permutation diagram is



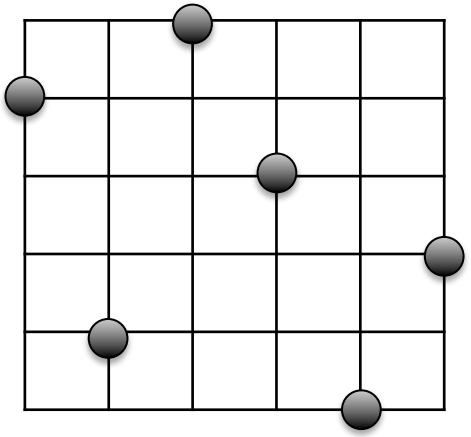
Classical patterns

- The pattern 132 occurs in the permutation 526413 three times
- The occurrences of 132 =  are

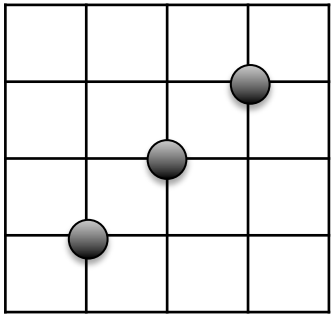
Classical patterns

The same permutation

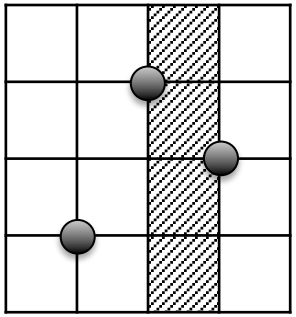


avoids the pattern

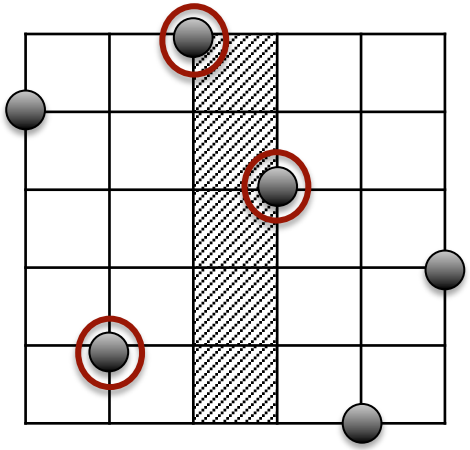
123 =



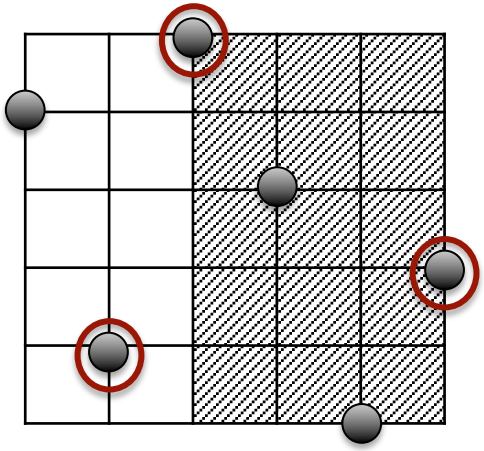
Vincular (generalized) patterns

- Requirement for some elements to be adjacent
- The pattern  occurs in 526413

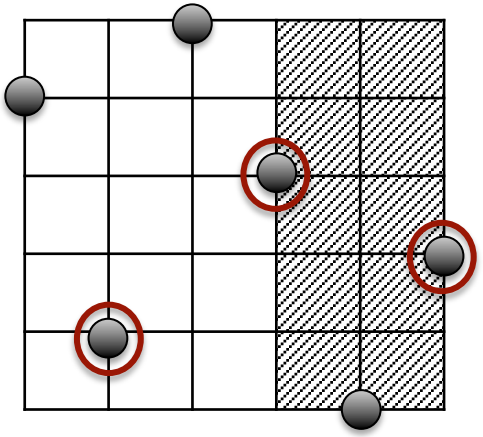
occurrence



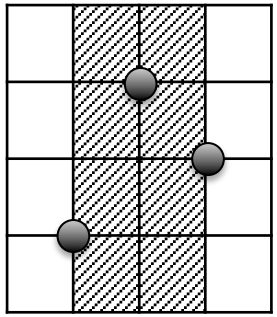
non-occurrence



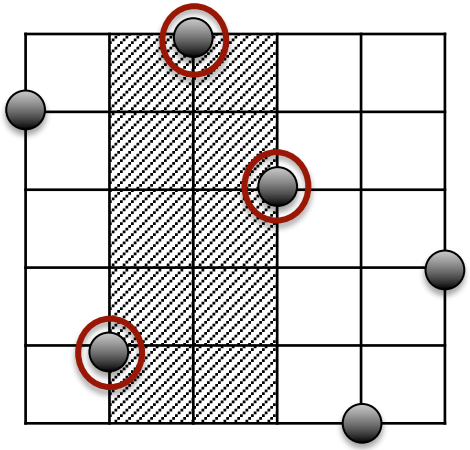
non-occurrence



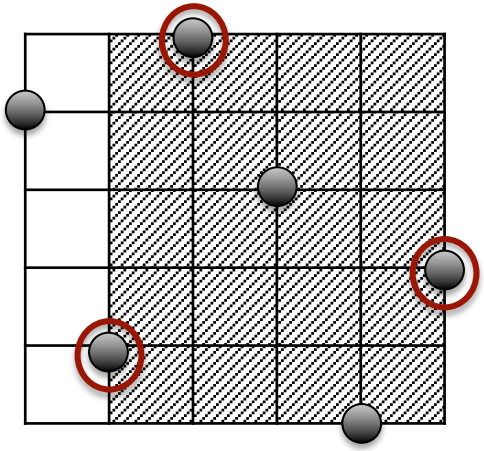
Consecutive patterns

- A subclass of vincular patterns
- The pattern  occurs in 526413

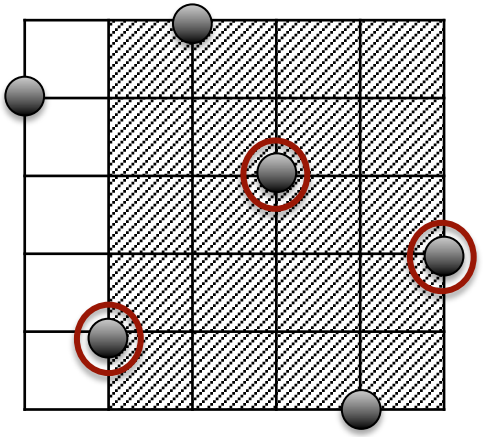
occurrence



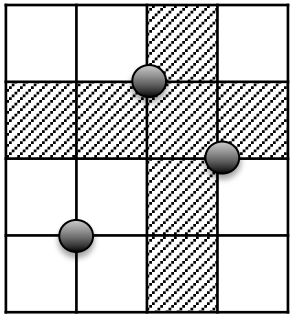
non-occurrence



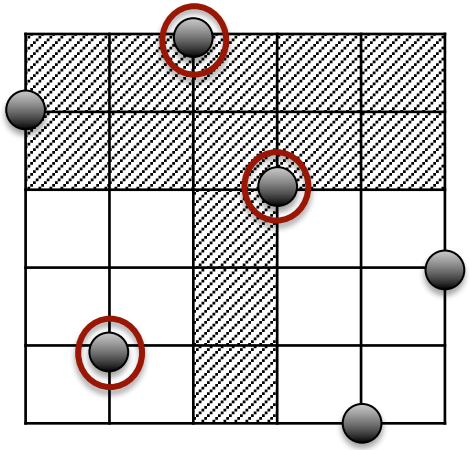
non-occurrence



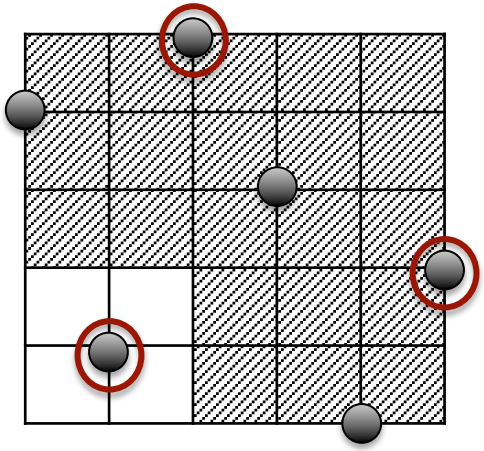
Bivincular patterns

- Additional requirements for some values to be adjacent
- The pattern  does not occur in 526413

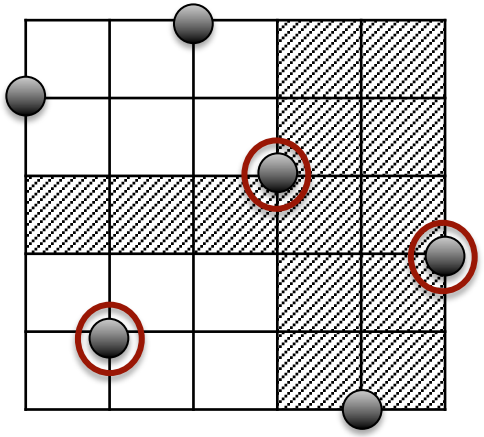
non-occurrence



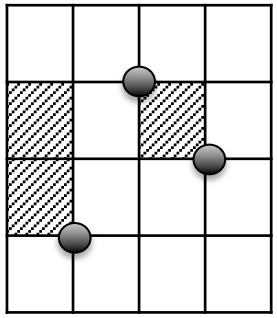
non-occurrence



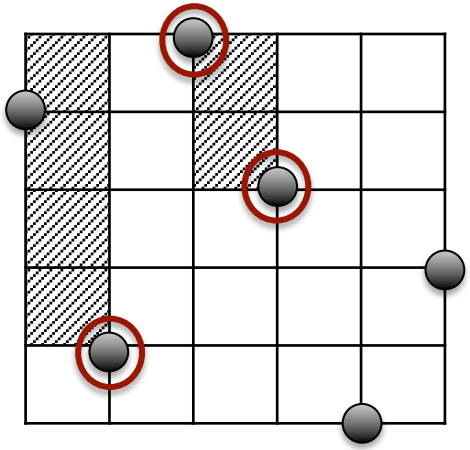
non-occurrence



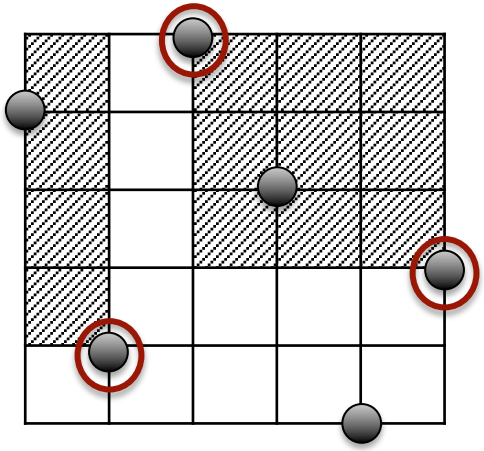
Mesh patterns

- Any square in a pattern can be shaded
- The pattern  occurs in 526413

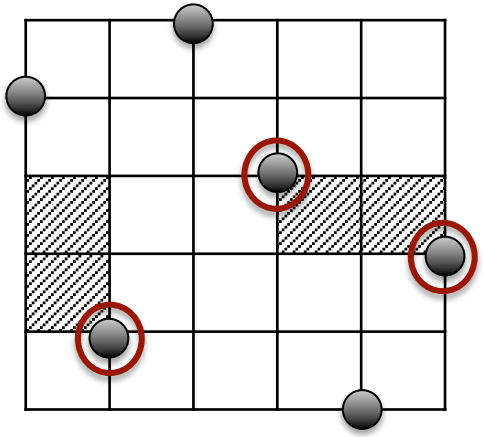
non-occurrence



non-occurrence

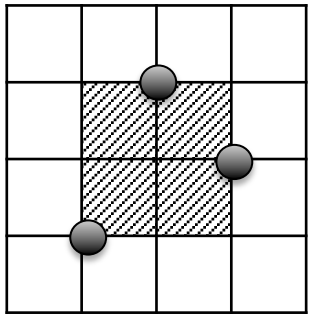


occurrence

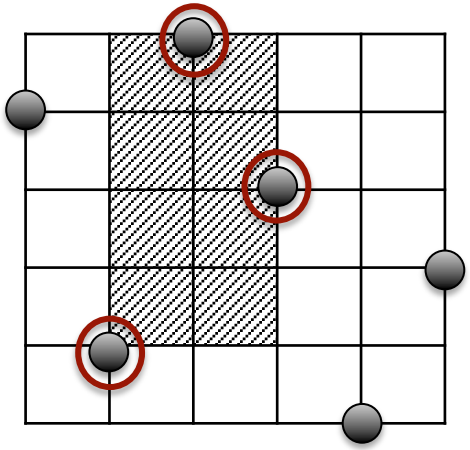


Boxed (framed) mesh patterns

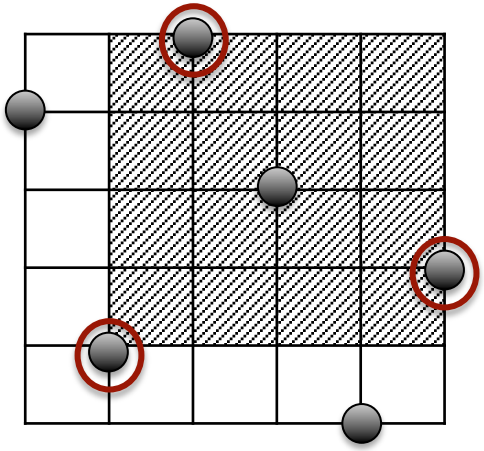
A square in a pattern is shaded **iff** it is internal

The pattern  occurs in 526413

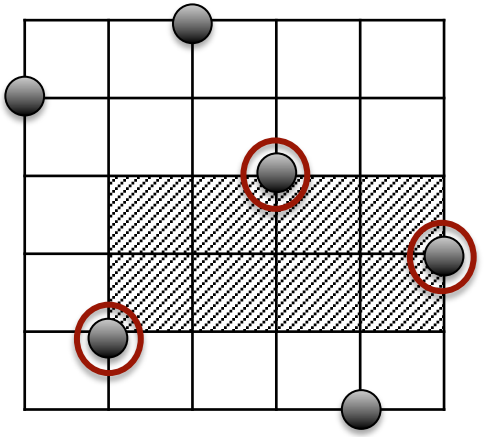
occurrence



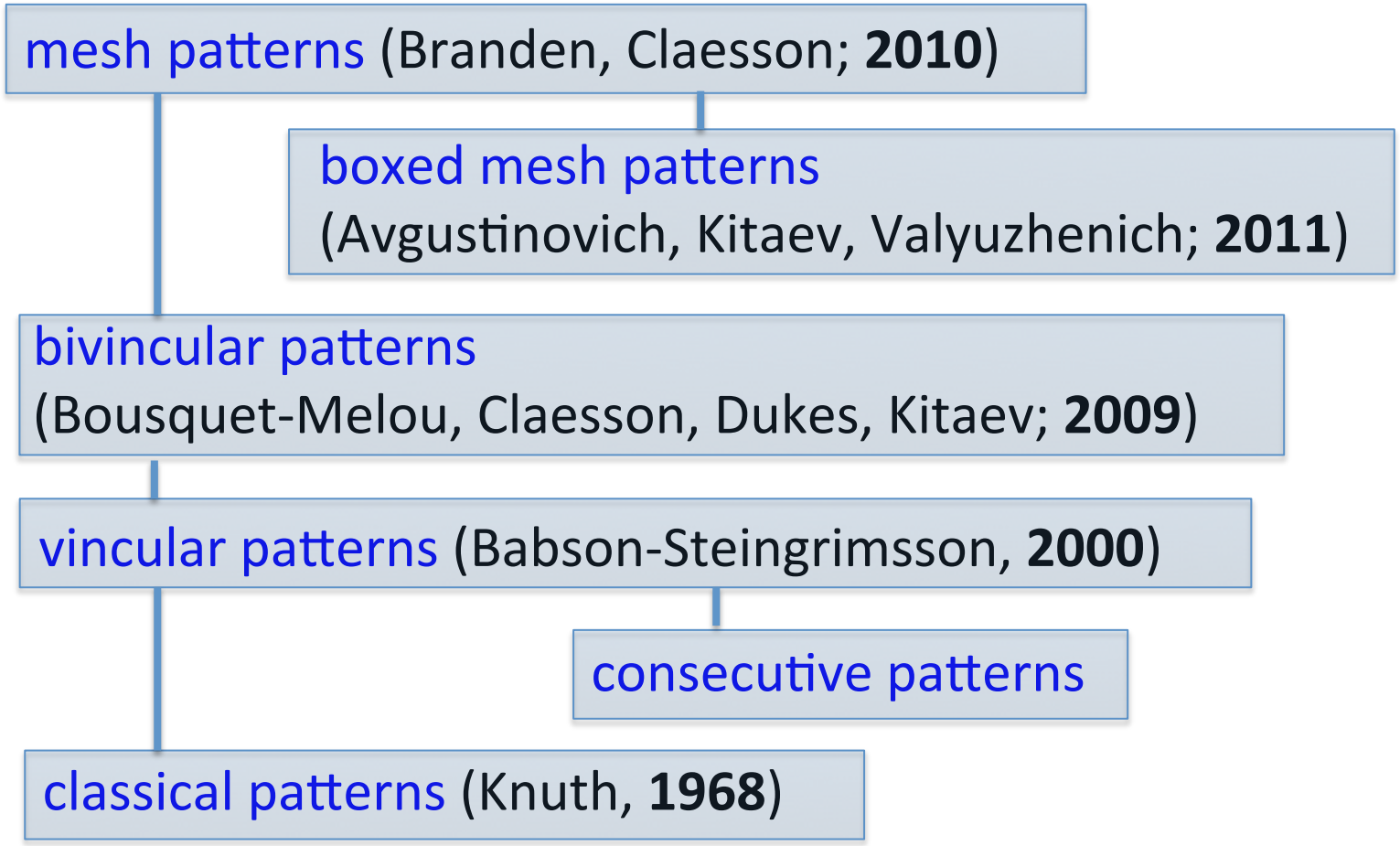
non-occurrence



occurrence

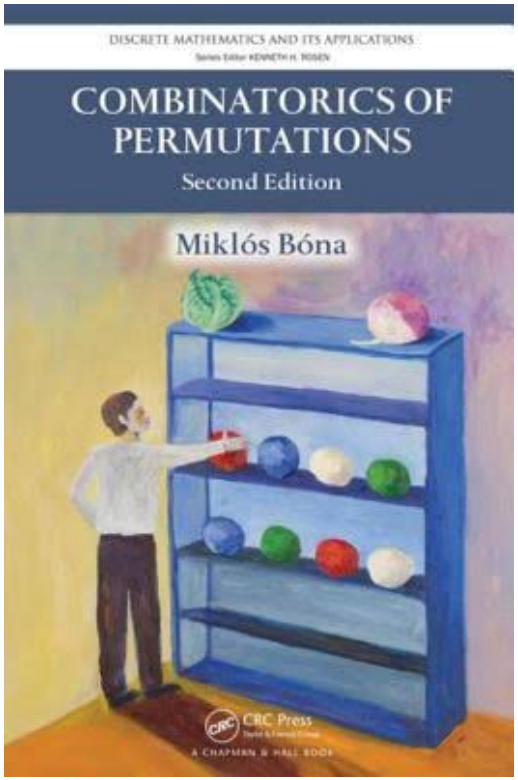


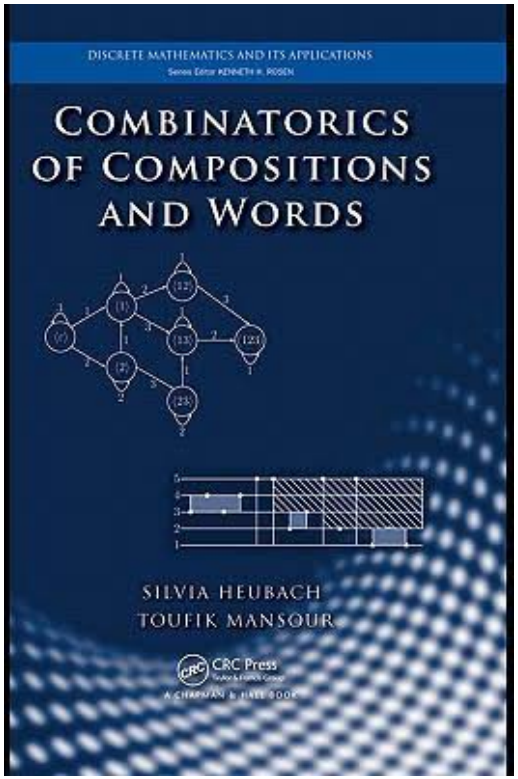
Patterns hierarchy

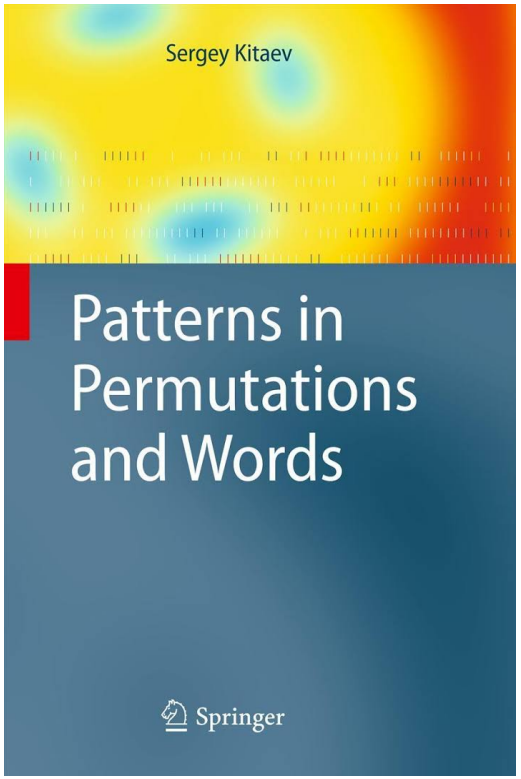


Publications related to the area

Should have well over 1,000 publications







Enjoy the mini-symposium!