

Arnbjörg Soffía Árnadóttir

Curriculum vitae

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CURRENT POSITION

Technical University of Denmark

Postdoc

– Supervisors: Carsten Thomassen & David Roberson

Lyngby, Denmark

Aug. 2022 – June 2024

EDUCATION

University of Waterloo

PhD in Combinatorics & Optimization

- Supervisor: Chris Godsil
- Thesis: State transfer & strong cospectrality in Cayley graphs.

Waterloo, ON, Canada

Sep. 2017 – July 2022

University of Iceland

Magister Scientiarum MS in Mathematics

- Supervisor: Rögnvaldur Möller
- Thesis: Group actions on infinite digraphs and the suborbit function.

Reykjavík, Iceland

Aug. 2014 – Oct. 2016

University of Bordeaux

Erasmus exchange program (as part of the MS listed above)

Bordeaux, France

Aug. 2014 – June 2015

University of Iceland

Baccalaureus Scientiarum BS in Mathematics, Minor in French

Reykjavík, Iceland

Aug. 2011 – June 2014

PUBLICATIONS

Preprints & submitted papers

1. A.S. Árnadóttir, J.D. de Bruyn, P.N. Kar, D.E. Roberson, P. Zeman. Quantum Sabidussi's Theorem. 2024

Published papers

1. A.S. Árnadóttir and C. Godsil. A Note on eigenvalues of Cayley graphs. *Linear Algebra and its Applications*, 2023. [arXiv version]
2. A.S. Árnadóttir and C. Godsil. On state transfer in Cayley graphs for abelian groups. *Quantum Information Processing*, 2023. [arXiv version]
3. A.S. Árnadóttir and C. Godsil. Strongly cospectral vertices in normal Cayley graphs. *Discrete Mathematics*, 2023. [arXiv version]
4. A.S. Árnadóttir, W. Lederle and R.G. Möller. Cayley–Abels graphs and invariants of totally disconnected, locally compact groups. *Journal of the Australian Mathematical Society*, 2022.
5. A.S. Árnadóttir, W. Lederle and R.G. Möller. On Infinite, Cubic, Vertex-Transitive Graphs with Applications to Totally Disconnected, Locally Compact Groups. *Electronic Journal of Combinatorics*, 2022.

Theses

1. A.S. Árnadóttir. State Transfer & Strong Cospectrality in Cayley Graphs. PhD thesis, 2022.
2. A.S. Árnadóttir. Group Actions on Infinite Digraphs and the Suborbit Function. Masters thesis, 2016.

TALKS

Conference talks

1. Spectra of normal Cayley graphs. 10th Slovenian Conference on Graph Theory, 2023.
2. Association schemes and spectra of normal Cayley graphs. 25th Conference of the International Linear Algebra Society, 2023.
3. Quantum walks on Cayley graphs. Northeast Women in Algebra and Combinatorics Conference Celebrating the 50th Anniversary of the Association for Women in Mathematics (NEWAC50AWM), 2021.

Invited talks

1. Group-invariant quantum correlations. Graphs Meet Quantum - A meeting at the Dept of Computer Science, Federal University of Minas Gerais, Brazil, 2023.
2. Normal Cayley graphs, association schemes and spectra. 29th Nordic Congress of Mathematicians, Ålborg University, 2023.
3. Cayley graphs, association schemes and state transfer. Algebraic graph theory seminar (online), University of Waterloo, 2022.
4. Cubic vertex-transitive graphs with infinite vertex stabilizers. Number theory and Combinatorics seminar (online), University of Lethbridge, 2021.
5. Continuous quantum walks. Math Colloquium, University of Iceland, 2019.
6. Graphs in algebra and algebra in graphs. Joint math colloquium, University of Waterloo, 2019.

Seminar talks

1. Quantum walks – an introduction. AlgoLoG seminar, Technical University of Denmark, 2022.
2. Strongly cospectral vertices, Cayley graphs and other things. Algebraic graph theory seminar (online), University of Waterloo, 2020.
3. Perfect state transfer in Cayley graphs. Algebraic graph theory seminar, University of Waterloo, 2019.
4. The Perron-Frobenius Theorem. Algebraic graph theory seminar, Waterloo, 2019.
5. Netamótanir á \mathbb{Z} -netið [Graph homomorphisms onto the \mathbb{Z} -graph]. Málstofa unga fólksins [Seminar of the young people], University of Iceland, 2016.

TEACHING

Teaching assistant

University of Waterloo

- Algebraic graph theory
- Introduction to graph theory (twice) - nominated for the Outstanding TA award in fall 2020
- Introduction to combinatorics (n times) - won the Outstanding TA award in fall 2021
- Mathematical discovery and invention
- Calculus 2 for engineering

Waterloo, ON, Canada

Sep. 2017 – May 2022

Sessional teacher

University of Iceland

- Linear algebra
- Probability and statistics

Reykjavík, Iceland

Sep. 2015 – May. 2016

Seminars

Have been involved in organizing the following seminars.

- Waterloo Algebraic Graph Theory Seminar. Restarted it in its current online form in July 2020. Chaired until January 2021 and co-organized until June 2022.
- Málstofa unga fólksins [Seminar of the young people] - math grad student seminar at the University of Iceland. Started this seminar in July 2016. Organized and chaired for the first few months.

Workshops / Conferences

Have been / am currently involved in organizing the following workshops / conferences.

- Godsil75 – A virtual birthday conference for Chris Godsil (online), March 2024
- The 26th Ontario Combinatorics Workshop, Waterloo, May 2022
- Open problems in algebraic graph theory (online), Waterloo, May 2021

Journal refereeing

Have refereed papers for the following peer-reviewed journals.

- Discrete Mathematics
- Linear and Multilinear Algebra
- Linear Algebra and its Applications
- Combinatorial Theory