Pacific Institute for the Mathematical Sciences

PIMS MONTHLY CONNECTION | **January 2021**

Hello from PIMS

As we enter 2021, we have some updates to share with the PIMS community.

To recognize PIMS 25th year, we have curated a special colloquium to mark this celebration. The PIMS 25th Anniversary Network-Wide Colloquium launches on January 21, with a lecture by Ingrid Daubechies.

We are pleased to share that Elina Robeva has won the 2020 UBC - PIMS Mathematical Sciences Young Faculty Award. More details can be found in the News & Announcements section.

Also, we are happy to share the 2021 Event Highlights Poster with the PIMS community.

Additionally, to aid in the facilitation of connections within the PIMS network, a Slack channel has been established. We hope this will further support research collaborations and the sharing of scientific information.

We look forward to celebrating the PIMS network in 2021 with robust connections, mathematical excellence and the advancement of research within our community.

Sincerely,
The PIMS Team

FEATURE EVENTS

Emergent Research: The PIMS Postdoctoral Fellow Seminar

January 13: Hosted Virtually by PIMS
Christopher M. van Bommel: Quantum State Transfer on Graphs

Quantum computing is believed to provide many advantages over traditional computing, particularly considering the speed at which computations can be performed. One of the challenges that needs to be resolved in order to construct a quantum computer is the

transmission of information from one part of the computer to another. This transmission can be implemented by spin chains, which can be modeled as a graph, and analyzed using algebraic graph theory. The ideal situation is that of perfect state transfer, where there exists a time interval during which the information is perfectly moved from one location to another. As perfect state transfer is relatively rare, we also consider pretty good state transfer, where for any desired level of accuracy, there exists a time interval during which the information transfer achieves this accuracy. We will discuss determining whether graphs admit perfect or pretty good state transfer.

PIMS 25th Anniversary Network-Wide Colloquium

January 21: Hosted Virtually by PIMS
Ingrid Daubechies

To celebrate the 25th Anniversary of PIMS, we have curated a special colloquium, featuring distinguished speakers with mathematical connections across the PIMS network. The PIMS 25th Anniversary Network-Wide Colloquium launches a year of activities marking a momentous year, with Ingrid Daubechies setting the stage with the first lecture.

UBC - PIMS Mathematical Sciences Young Faculty Award Colloquium

January 22: Hosted Virtually by PIMS
Liam Watson

Dr. Watson is an Associate Professor of Mathematics at UBC, with a research focus on Low Dimensional Topology. He received his PhD in 2009, from the University of Quebec at Montreal (and is also an alum of UBC). Dr. Watson has won teaching awards from UBC, the University of Glasgow and UCLA; held a tier 2 Canada Research Chair award, and a CRM- Simons professorship. His research and distinctive partnership with other topologists has resulted in a successful PIMS Collaborative Research Group Award. He also was the 2019 recipient of the UBC - PIMS Mathematical Sciences Young Faculty Award.

For more lectures and PIMS resources, please visit mathtube.org

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Click below for all events | January 2021

Scientific

NEWS & ANNOUNCEMENTS

Elina Robeva wins the 2020 UBC - PIMS Mathematical Sciences Young Faculty Award!

We are pleased to announce that Dr. Elina Robeva is the recipient of the 2020 UBC - PIMS Mathematical Sciences Young Faculty Award. The announcement was made in early December by PIMS UBC Site Director, Prof Brian Marcus. As the recipient of this award, Dr. Robeva will receive $1,000 and give a UBC - PIMS Mathematical Sciences Young Faculty Award Colloquium.

PIMS Education Call For Proposals

The Pacific Institute for the Mathematical Sciences (PIMS) welcomes applications for support of education activities in the mathematical sciences to occur after April 1, 2021. The deadline for submission is **January 19, 2021**. We will be awarding grants from $500 up to $5000. We welcome proposals aimed at creating opportunities for students to learn (Math Fairs, Math Mania, Summer Camps, Problem Solving Workshops, Hackathons), for teachers to improve their knowledge of mathematics, statistics and computer science, and their capacity to teach (Teacher training workshops). PIMS welcomes proposals that address historical challenges faced by First Nations, Inuit, and Métis and encourage submissions with new ideas! More details can be found here.

MEDIA

PIMS COMMUNITY RECENT PUBLICATIONS

1. Le, H. (2020). A PTAS for subset TSP in minor-free graphs. *Proceedings of the Fourteenth Annual ACM-SIAM Symposium on Discrete Algorithms*(pp. 2279-2298). Society for Industrial and Applied Mathematics.

2. Bramburger, J. J. (2020). Exact minimum speed of traveling waves in a Keller–Segel model. *Applied Mathematics Letters, 111,*106594.

3. Lavenant, H. (2020). Unconditional convergence for discretizations of dynamical optimal transport. *Mathematics of Computation.*

ABOUT PIMS

The Pacific Institute for the Mathematical Sciences (PIMS) was created in 1996 to promote **discovery**, **understanding** and **awareness** in the mathematical sciences. PIMS has expanded from the mathematics community of **Alberta** and **British Columbia** to include **Washington State**, **Saskatchewan** and **Manitoba**. We are proponents of mathematical **collaboration with industry**, **innovation in mathematics education** from K-12 to graduate level initiatives, **public outreach** and **partnerships** with similar organizations around the globe. We fund Collaborative Research Groups, Post-Doctoral Fellowships, individual events, and competitive prizes in mathematics.

FOLLOW US!

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