Dear MATH+ Community,

Last week, the lecture period started with a manifold of BMS basic and advanced courses for our Master and doctoral students.

Complementary, we already had this semester’s first Kovalevskaya Colloquium as part of the MATH+ Friday lecture series. On 16 April, Prof Maria Chudnovsky (Princeton U) gave a talk on “Induced subgraphs and tree decompositions”.

On 13 April, the organizers around MATH+ members Myfawny Evans (U Potsdam) and Frank H. Lutz (TU Berlin) celebrated the opening of the current Thematic Einstein Semester on Geometric and Topological Structure of Materials.

Unfortunately, the Corona pandemic does not seem to ease any time soon, and it will continue to be challenging to talk about math(ematical research) in person for a while. Thus, in order to keep you up to date with ongoing research in MATH+, we introduce MATH+ Spotlight, a new series of talks given by MATH+ (post) doctoral researchers. Further information on MATH+ Spotlight and other upcoming events are given below in the events section of this newsletter.

We are happy to announce that, after successfully finishing Phase I in March, BMS student Yoanna Kirilova will continue her studies within the BMS. To support her PhD studies, she is awarded the Hilda Geiringer Scholarship by the BMS Committee.

If you have any exciting news that you wish to share regarding your research, publications, prizes, interesting guests, the other MATH+ communication formats, or the next newsletter, please contact Ariane Beier with further information: press@mathplus.de.

Stay safe!

With best wishes,
Call for Research Projects

We would like to inform you about our new Call for Research Project Proposals. With this third call since its start, MATH+ wants to further sharpen the profile of the Application Areas and Emerging Fields, in particular regarding the creation of MATH+ success stories. For this purpose, we call for two different types of projects for the AAs and EFs—application-immediate and application-enabling.

We expect to be able to fund **up to 20 new projects** in this round. However, this number may be subject to changes depending on budget decisions of DFG that will not be made before summer 2021. This call will be complemented by a call for individual incubator projects.

**Submission deadline:** 11 June 2021.

Read more

Members Area of MATH+ Webpage

The [members area](#) of the MATH+ webpage is officially online. It includes information on open calls, deadline, and further organizational matters.

A link to the members section can also be found at the bottom of the [MATH+ webpage](#). If you already have an account, you can [log in](#) with your username and password; else you have to [register](#) first.

New Junior Research Group Leader at Humboldt Universität: Fabian Telschow

Fabian Telschow took up his position as head of the MATH+ Junior Research Group “Statistical Inversion and Quantification of Uncertainties” at HU Berlin in March 2021.

In his research, he develops statistical methodologies for image analysis and functional data using random field theory. His focus lies on inferential methodologies such as confidence sets for random fields on irregular domains in arbitrary dimensions and related topics such as quantification of stochastic uncertainties of level sets.

With the group of Thomas Nichols (University of Oxford), he applies these methods to neuro-imaging data. Further applications comprise, for example, biomedical gait data and climate data.

Fabian Telschow studied mathematics and physics at the Georg-August-University Göttingen and received his Ph.D. in mathematical statistics from Georg-August-University Göttingen in September 2016 under the supervision of Stephan Huckemann and Axel Munk. Afterwards, he held a Postdoc position at the University of California, San Diego, working with Armin Schwartzman.

Read more
BMS Awards “Hilda Geiringer Scholarship” to Yoanna Kirilova

We are delighted to announce that Yoanna Kirilova is awarded the BMS “Hilda Geiringer Scholarship”. The scholarship is presented to promising PhD students to support their mathematical research and in recognition of their outstanding achievements. Each year, one Phase II student is selected to receive the scholarship by the BMS Committee.

Excited by mathematics ever since she was a kid, Yoanna Kirilova attended a math school. Encouraged by her math teacher, she pursued a degree in mathematics, which she started in 2015 at HU Berlin. Yoanna Kirilova’s mathematical area of interest is differential geometry; in particular, symplectic topology and holomorphic curves. She was drawn to this area after attending a topology class in the 4th semester of her Bachelor’s studies. Subsequent classes on topology and differential geometry solidified her interest.

Yoanna Kirilova was a BMS Phase I student until March 2021 and is excited to start her PhD on “Non-amenable spinal open books” supervised by Prof Chris Wendl, with whom she also did her Master thesis “The Morse-Smale condition with symmetry”.

Read more

The Following BMS-Students Have Successfully Completed Their Doctorate

Ander Lamaison Vidarte (FU Berlin)
“Upper density problems in infinite Ramsey theory”

Jonas Pade (HU Berlin)
„Analysis and waveform relaxation for a differential-algebraic electrical circuit model“

Stefan Peter Müller (HU Berlin)
„Compression of an array of similar crash test simulation results“

Mones Konstantin Raslan (TU Berlin)
“Solving Parametric PDEs with Neural Networks: Unfavorable Structure vs. Expressive Power”

Nilasis Chaudhuri (TU Berlin)
“Qualitative properties of solutions to partial differential equations arising in fluid dynamics”

Congratulations!
**Review**

*Opening of TES “Geometric and Topological Structures of Materials”*

The opening event of this semester’s Thematic Einstein Semester on Geometric and Topological Structures of Materials on 13 and 14 April was a big success. More than 70 participants listened to excellent talks by invited speakers such as Daphne Klotsa, Motoko Kotani, and Stephen Hyde.

This TES is devoted to recent developments in the field of computational materials science. It aims to bring together experts from the sciences with experts from computational topology, computational algebraic, discrete differential, and stochastic geometry working on the structure and function of materials. The TES is organized by MATH+ members Myfanwy Evans (U Potsdam) and Frank H. Lutz (TU Berlin) together with international collaborators Kathryn Hess Bellwald (EPFL), Dimitry Morozov (LBNL), and Ileana Streinu (Smith College).

Participation at the TES is free of charge. Please register via the TES webpage.

**Read more**

*Kovalevskaya Colloquium with Maria Chudnovsky*

On 16 April, this semester’s Kovalevskaya Colloquium featured a talk on “Induced subgraphs and tree decompositions” by Prof Maria Chudnovsky (Princeton University).

The Kovalevskaya Colloquia are part of the MATH+ Friday lecture series. The lectures are given by female mathematicians, who can be seen as successful role models. Prior to each lecture, there is an informal Kovalevskaya lunch for the invited speaker and the female students and postdocs of MATH+. These meetings offer an opportunity to talk to the speaker about mathematics as well as career paths, opportunities, and perspectives. The Kovalevskaya Colloquia are part of MATH+’ Equal Opportunity & Diversity Strategy.

**Read more**

**Preview**

*Introducing MATH+ Spotlight*

In order keep you up to date with current research developments in MATH+, we are launching a new series of talks given by (post) doctoral researchers of MATH+ projects. During lecture periods, the talks of 30 minutes plus 15 minutes of Q&A will be held every second Wednesday at 12 pm. The first talk on April 21 by Luzie Helfmann of project EF4-2: Understanding Tipping and Other Dynamical Transitions in Systems Containing Human Agents.

The talks aim to be understandable for all MATH+ members. All doctoral students and members funded by MATH+ are expected to attend. Of course, everyone else is also invited and encouraged to participate.
21 April: Luzie Helfmann – EF4-2: Understanding Tipping and Other Dynamical Transitions in Systems Containing Human Agents

05 May: Kostas Papafitsoros – EF3-5: Direct Reconstruction of Biophysical Parameters Using Dictionary Learning and Robust Regularization

19 May: Daniel Schmidt genannt Waldschmidt – AA3-6: Stochastic Scheduling with Restricted Adaptivity

Read more

+ MATH+ Fridays in Summer Semester 2021

07 May: tba

21 May: Martin R. Bridson (U Oxford): tba


02 July: Kathryn Hess (EPFL Lausanne): tba


+ Important Days and Events

22 April: Girls’ Day 2021

24 April: 25. Berliner Tag der Mathematik (25th Berlin Day of Mathematics) is cancelled

05 June: Lange Nacht der Wissenschaften (Long Night of the Sciences)