

44<sup>th</sup> Finnish Summer School on Probability and Statistics 2026 (in UTC+3=EEST)

|               | Monday 25.5               | Tuesday 26.5               | Wednesday 27.5                                       | Thursday 28.5              | Friday 29.5                |
|---------------|---------------------------|----------------------------|--|----------------------------|----------------------------|
| 08:00 - 09:00 |                           | 08:00 - 09:00<br>breakfast | 08:00 - 09:00<br>breakfast                           | 08:00 - 09:00<br>breakfast | 08:00 - 09:00<br>breakfast |
| 09:00 - 10:00 |                           | 09:15 - 10:00<br>Di Nunno  | 09:15 - 10:00<br>Röttger                             | 09:15 - 10:00<br>Berglund  | 09:15 - 10:00<br>Di Nunno  |
| 10:00 - 11:00 |                           | 10:15 - 11:00<br>Di Nunno  | 10:15 - 11:00<br>Röttger                             | 10:15 - 11:00<br>Berglund  | 10:15 - 11:00<br>Di Nunno  |
| 11:00 - 12:00 |                           | 11:15 - 12:00<br>Berglund  | 11:15 - 12:00<br>Sen                                 | 11:15 - 12:00<br>Röttger   | 11:15 - 12:00<br>Röttger   |
| 12:00 - 13:00 | 12:00 - 12:50<br>lunch    | 12:00 - 13:00<br>lunch     | 12:00 - 13:00<br>lunch                               | 12:00 - 13:00<br>lunch     | 12:15 - 13:00<br>Röttger   |
|               | 12:50 - 13:00<br>opening  |                            |  |                            |                            |
| 13:00 - 14:00 | 13:00 - 14:30<br>Berglund |                            |  |                            | 13:05 - 14:00<br>lunch     |
|               |                           | 13:30 - 14:30<br>Berglund  | 13:30 - 14:30<br>Sen                                 | 13:30 - 14:30<br>Röttger   |                            |
| 14:00 - 15:00 | 14:30 - 15:00<br>coffee   | 14:30 - 15:00<br>coffee    |  | 14:30 - 15:00<br>coffee    |                            |
| 15:00 - 16:00 | 15:00 - 15:45<br>Sen      | 15:00 - 15:45<br>Sen       | 15:00 - 18:00<br>sauna by the lake<br>(ladies first) | 15:00 - 15:45<br>Di Nunno  |                            |
| 16:00 - 17:00 | 16:00 - 17:00<br>Sen      | 16:00 - 17:00<br>Sen       |  | 16:00 - 17:00<br>Di Nunno  |                            |
|               | 17:00 - 18:00<br>dinner   | 17:00 - 18:00<br>dinner    |  | 17:00 - 18:00<br>dinner    |                            |

18:30 - 20:00  
Summer school  
"gala" dinner

20:00 - 23:00  
sauna by the lake  
(ladies first)

20:00 - 23:00  
sauna by the lake  
(ladies first)

20:00 - 23:00  
sauna by the lake  
(ladies first)

## 1. MINICOURSES

**Topics in Gaussian Wiener chaos expansion**

NILS BERGLUND

Université d'Orléans

**Abstract** Wiener chaos (or polynomial chaos) expansion is a way to represent random variables as polynomials of Gaussian random variables. It links fundamental concepts in probability, statistics, and physics, such as Hermite polynomials, cumulant expansions, Isserlis/Wick calculus, the Gaussian free field, the quantum harmonic oscillator, Fock space, and Feynman diagrams. The lectures will start with the case of one-dimensional normal variables, assuming only elementary knowledge on continuous random variables. They will then explore some of the above connections, first for finite-dimensional multivariate Gaussians, and then for Gaussian fields. <https://arxiv.org/abs/2605.14630>

**BSDEs and fully-dynamic risk measures**

GIULIA DI NUNNO

University of Oslo

**Probabilistic graphical models and their application to extreme value statistics**

FRANK RÖTTGER

University of Twente

**SJS Lectures: Recent progress in multi-modal data analysis**

SUBHABRATA SEN

Harvard University

**Abstract** Multi-modal datasets comprise diverse features collected on the same entity. For example, one might collect genomic, proteomic and transcriptomic data from the same individual. The goal is to combine these features to improve downstream statistical performance. While multi-modal data is ubiquitous across diverse applications, statistical theory for multi-modal data analysis lies in a nascent state. In this course, we will discuss some recent progress on the rigorous study of these problems. To derive the associated statistical algorithms, we will utilize insights from high-dimensional probability, graphical models and statistical physics.

## 2. VIRTUAL POSTER PRESENTATIONS

With 4 minicourses this year it won't be possible to schedule contributed talks. Participants who are willing to contribute by presenting their own work, have the opportunity to do so in a "virtual" poster session. Submit title, abstract and slides of your poster presentation by using the registration form or by sending an e-mail to the organizer. The posters will be published on the summer school webpage it will be fun to discuss each other posters at any time outside lectures hours.

**Quantitative mixing for locally monotone stochastic evolution equations****JONAS TÖLLE , JOINT WORK WITH GERARDO BARRERA****Aalto University, IST Lisboa****Potentials of occupations measures of Gaussian fields and fractal minimizers****JONAS TÖLLE , JOINT WORK WITH MICHAEL HINZ AND LAURI VIITASAARI****Aalto University and Bielefeld****Concentration of large random Gram matrices****IAN VÄLIMAA****Aalto University**

**Abstract** We consider the concentration of a Gram matrix  $XX^T$  and its off-diagonal part, where  $X$  is a large random matrix with independent and centered entries bounded by one. Such matrices play a fundamental role in high-dimensional statistics including covariance matrix estimation, dimension reduction and tensor clustering. It is well-known that, under suitable assumptions, the empirical eigenvalue distribution of the Gram matrix converges to the Marchenko–Pastur distribution. Furthermore, the extremal eigenvalues converge to the edges of the limiting distribution. In contrast, less is known about the behavior when the diagonal is removed, especially when the matrix  $X$  is particularly wide. This presentation focuses on the extremal eigenvalues of the off-diagonal part of the Gram matrix.

## 3. PARTICIPATION AND ACCOMMODATION FEES

The participation fee (30 €) has to be paid on location in cash or by using MobilePay.

The participants who are visiting the summer school for the day and do not need accommodation, can pay on place for their lunch or dinner directly to the biological station canteen.

Those who need accommodation at Lammi biological station should register by May 9th ! The accommodation and lodging fee (depending on the number of nights and type of room) can be paid by the participants who are not sponsored by the FDNSS directly to the reception of Lammi Biological Station upon arrival, using credit or debit bank cards (cash will be not accepted). Accommodation prices:

<https://www.helsinki.fi/en/research-stations/lammi-biological-station/prices-and-booking/collaborators>

<https://www.helsinki.fi/en/research-stations/lammi-biological-station/prices-and-booking/university-helsinki-staff>

Participants who have been awarded on their request a FDNSS-travel grant from the summer school organization do not need to pay the accommodation fee.

## 4. ATTENDING THE SUMMER SCHOOL REMOTELY

The lectures will be recorded and broadcasted online. Online participation is free of charge. The timezone is EEST = UTC +3 and the zoom seminar link is

<https://uvasa.zoom.us/j/68981826834?pwd=zBzAsaTN2UaNuystckbWdWkQBjCs9e.1>  
with passcode 857705.

## 5. USEFUL INFORMATION

**VENUE:**

Lammi biological station Pääjärventie 320  
 16900 Lammi, Finland  
 phone +358-(0)9 191 40733  
 fax +358-(0)9 191 40746

The nearest towns are Hämeenlinna (about 45 km) and Lahti (about 40 km), from which there are frequent bus connections to Lammi, see matkahuolto, onnibus. When you reach the bus stop in Lammi, please feel free to call Dario (the organizer) at the phone number +358503754069, so that hopefully we can pick you up by car from the nearest bus-stop, which is Kirkkokallio, some 3 km away. If you really like the idea you could also take your bicycle with you on the train and cycle for only 31 km to Lammi biological station from the closest railway station, which is Turenki on the Hämeenlinna side.

**IMPORTANT !** For those of you arriving to the Lammi Biological Research Station already on sunday 24.5:

The reception office is closed on sundays. You shall enter the dormitory (building 2 on the map, wing B) by using the door code which will be sent to you. Inside you will find on a table the keys of your room.

For those staying in Lammi until the end of the summer school, on friday 29.5 we shall empty our rooms by 10 am.

**Signal group** By using the link

[https://signal.group/#CjQKINkz0ip-LuCvNt-dalraiKoKv\\_dstfG6o5fIrPCHgATIEhDfgZ00jC1TrVtnJBqNIB5u](https://signal.group/#CjQKINkz0ip-LuCvNt-dalraiKoKv_dstfG6o5fIrPCHgATIEhDfgZ00jC1TrVtnJBqNIB5u)

you can join the Signal group of the summer school to find information about the summer school shared by fellow participants, like travel plans to Lammi.

**Website**

<https://fdnss.fi/44th-finnish-summer-school-on-probability-and-statistics-50-years-jubilee/>

**Wi-Fi connection** at Helsinki University facilities two Wi-Fi networks are available, eduroam and HelsinkiUni Guest with password *uniquiest*

**Accommodation in Helsinki before/after the summer school** We suggest the Unihome university residence in Helsinki, booking from their website <https://unihome.fi/en/properties/toolo-towers> Of course it should be plenty of other convenient alternatives around Helsinki.

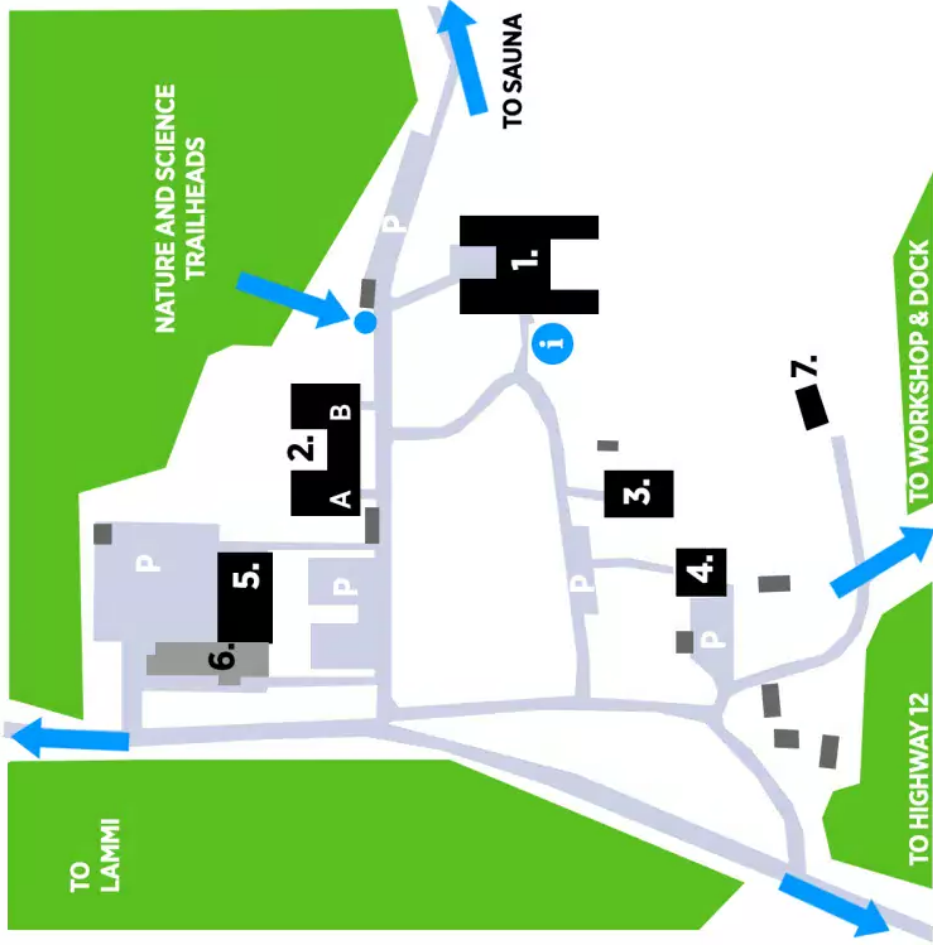
**Free time activities** The biological research station is surrounded by forest and it is next to a lake. Many activities are possible for relaxing during free time, cycling, rowing, swimming in the lake (IMPORTANT: bring your swimsuit!), fishing, sauna, walking / jogging in the forest, table-tennis, and there is also a volleyball court and a frisbee-golf course.

Let's hope that we will have nice summer weather, you can check the local weather forecast here.

Welcome to Lammi !

6. PARTICIPANTS LIST

|                      |                                |                                |  |
|----------------------|--------------------------------|--------------------------------|--|
| Chidiogo Joy Agboeke | joyagboe@uwasa.fi              | University of Vaasa            | Dept. of Mathematics and Statistics            |
| Elja Arjas           | elja.arjas@helsinki.fi         | University of Helsinki         | Dept. of Mathematics and Statistics            |
| Arnaud Bastian       | arnaud.bastian@abo.fi          | Åbo Akademi                    | Mathematics                                    |
| Nils Berglund        | nils.berglund@univ-orleans.fr  | Université d'Orléans           | Geosciences                                    |
| Beatrice Carlini     | beatrice.carlini@phd.unipd.it  | Università di Padova           |  |
| Giulia di Nunno      | giulia@math.uio.no             | University of Oslo             |  |
| Dario Gasbarra       | dario.gasbarra@uwasa.fi        | University of Vaasa            | Dept. of Mathematics and Statistics            |
| Eetu Halme           | eetu.halme@helsinki.fi         | University of Helsinki         | Department of Mathematics and Statistics       |
| Ilari Hatakka        | ilari.hatakka@helsinki.fi      | University of Helsinki         | Dept. of Mathematics and Statistics            |
| Onni Hinkkanen       | onni.u.i.hinkkanen@jyu.fi      | University of Jyväskylä        | Mathematics and Statistics                     |
| Göran Högnäs         | ghognas@abo.fi                 | Åbo Akademi                    | Mathematics                                    |
| Leena Kalliovirta    | leena.kalliovirta@helsinki.fi  | University of Helsinki         | Dept. of Mathematics and Statistics            |
| Tuuli Kauppala       | tuuli.kauppala@helsinki.fi     | University of Helsinki         | Dept. of Mathematics and Statistics            |
| Sangita Kulathinal   | sangita.kulathinal@helsinki.fi | Helsinki                       | Mathematics and Statistics                     |
| Jüri Lember          | jyri@ut.ee                     | Tartu University               | Institute of Mathematics and Statistics        |
| Lasse Leskelä        | lasse.leskela@aalto.fi         | Aalto University               | Department of Mathematics and Systems Analysis |
| Andrea Pedicone      | a.pedicone98@gmail.com         | La Sapienza                    | Department of Statistical Sciences             |
| Petteri Piironen     | petteri.piironen@helsinki.fi   | University of Helsinki         | Dept. of Mathematics and Statistics            |
| Kostiantyn Ralchenko | kostiantyn.ralchenko@uwasa.fi  | University of Vaasa            | School of Technology and Innovations           |
| Risto Raveala        | risto.raveala@helsinki.fi      | University of Helsinki         | Department of Mathematics and Statistics       |
| Frank Röttger        | f.roettger@utwente.nl          | University of Twente           |  |
| Maryam Saghii        | m.saghii@bbk.ac.uk             | Birkbeck University of London  | Computing and mathematical science             |
| Eero Saksman         | eero.saksman@helsinki.fi       | University of Helsinki         | Dept. of Mathematics and Statistics            |
| Paavo Salminen       | Paavo.Salminen@abo.fi          | Åbo Akademi                    | Dept. of Mathematics                           |
| Etienne Sebag        | etienne.sebag@helsinki.fi      | University of Helsinki         | Department of Mathematics and Statistics       |
| Subhabrata Sen       | subhabratasen@fas.harvard.edu  | Harvard University             |  |
| Shoummo Sen Gupta    | shoummosengupta@gmail.com      | Indian Institute of Technology | Koita Centre for Digital Health                |
| Oskar Soop           | oskar.soop@ut.ee               | University of Tartu            | Institute of Mathematics and Statistics        |
| Tommi Sottinen       | tommi.sottinen@iki.fi          | University of Vaasa            | School of Technology and Innovations           |
| Jonas Tölle          | jonas.tolle@aalto.fi           | Aalto University               | Department of Mathematics and Systems Analysis |
| Heikki-Pekka Varis   | heikki-pekka.varis@helsinki.fi | University of Helsinki         | Department of Mathematics and Statistics       |
| Tuomas Virtanen      | tvirtane@abo.fi                | Åbo Akademi                    | University Mathematics                         |
| Ian Välimaa          | ian.valimaa@aalto.fi           | Aalto University               | Mathematics and Systems Analysis               |
| Guanghao Zhang       | guanghao.zhang@helsinki.fi     | University of Helsinki         | Department of Mathematics and Statistics       |



1. MAIN BUILDING
2. DORMITORY (A & B WINGS)
3. HERRALA DORMITORY
4. PIIKALA DORMITORY
5. RESEARCH HALL
6. BIO-WILLAGE (NOT UH)
7. GUEST COTTAGE

**OFFICE**

Open Mon-Fri 9-15  
+358 (0) 2941 40733

**Outside office hours**

Janitor +358 (0)40 835 0192  
Fee for unlocking doors: 60 €

WILEY

## *Scandinavian Journal of Statistics*

Sharing innovative contributions to  
statistics theory and practice

- Established, reputable journal, founded in 1974 by four Scandinavian statistical societies
- Widely indexed, meaning your work is more discoverable
- Broad scope: we welcome submissions on a range of statistical topics
- Your research paper will be handled by our expert international editorial board



Submit your research:



# LiBERA Winterschool on Stochastic Interacting Systems

*January 4–9, 2027*

Kilpisjärvi Biological Station, Finland

**Courses by**

**Scott Armstrong** (Sorbonne/CNRS/Courant Institute)

**Ana Djurdjevac** (Oxford)

**Lauri Viitasaari** (Aalto)

<https://math.aalto.fi/en/research/stochastics/events/SIS2027/>

**Organizers: Gerardo Barrera, Stefano Pagliarani, Jonas Tölle**



Magnus Ehrnrooth Foundation

