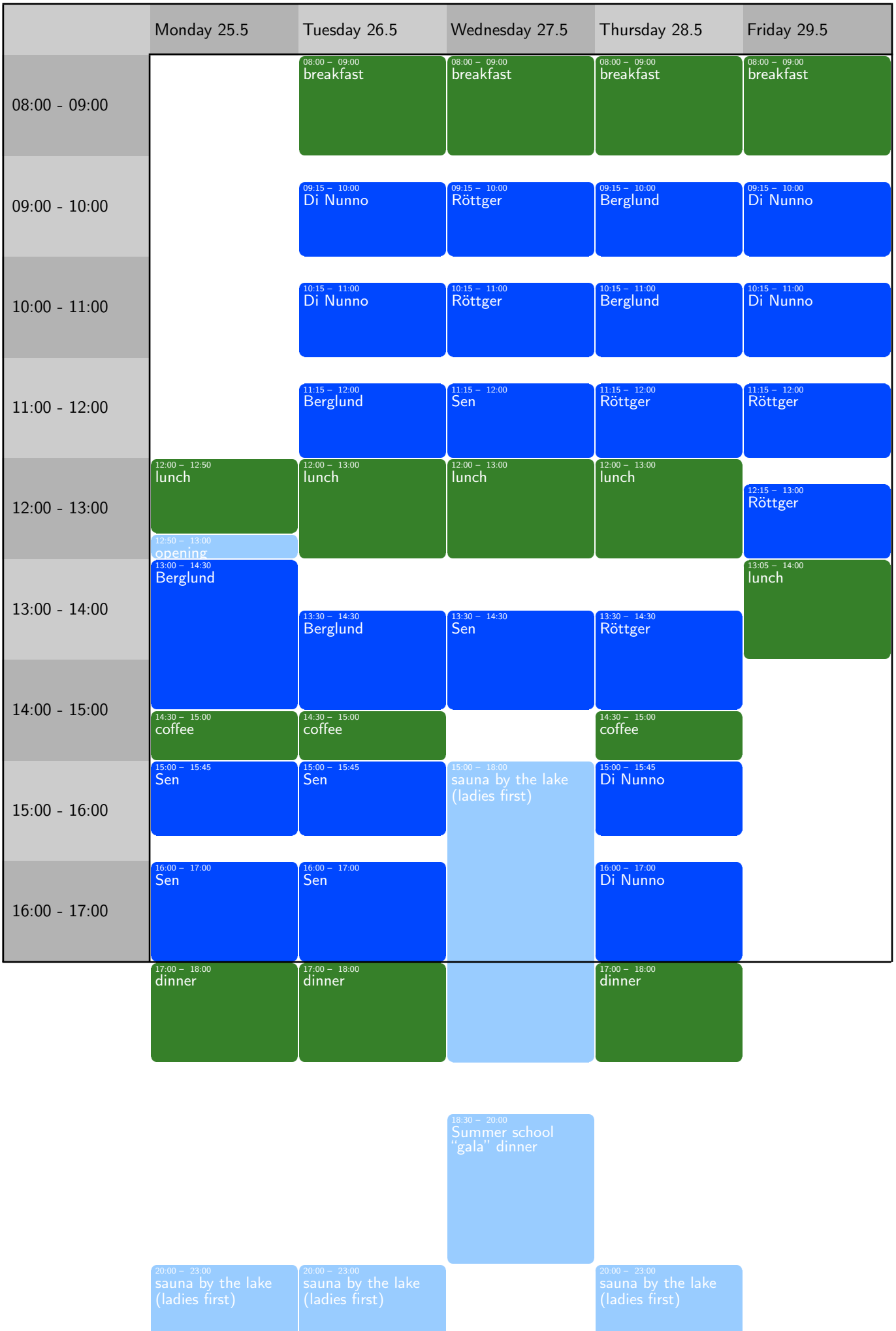
44th Finnish Summer School on Probability and Statistics 2026 (in UTC+3=EEST)



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 someof 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 $XX^\top$ 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 cantine.

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://uwasa.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/#CjQKINkzOip-LuCvNt-dalraiKoKv_dstfG6o5fIrPCHgATIEhDfgZOOjC1TrVtnJBqNIB5u`
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 *uniguest*

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

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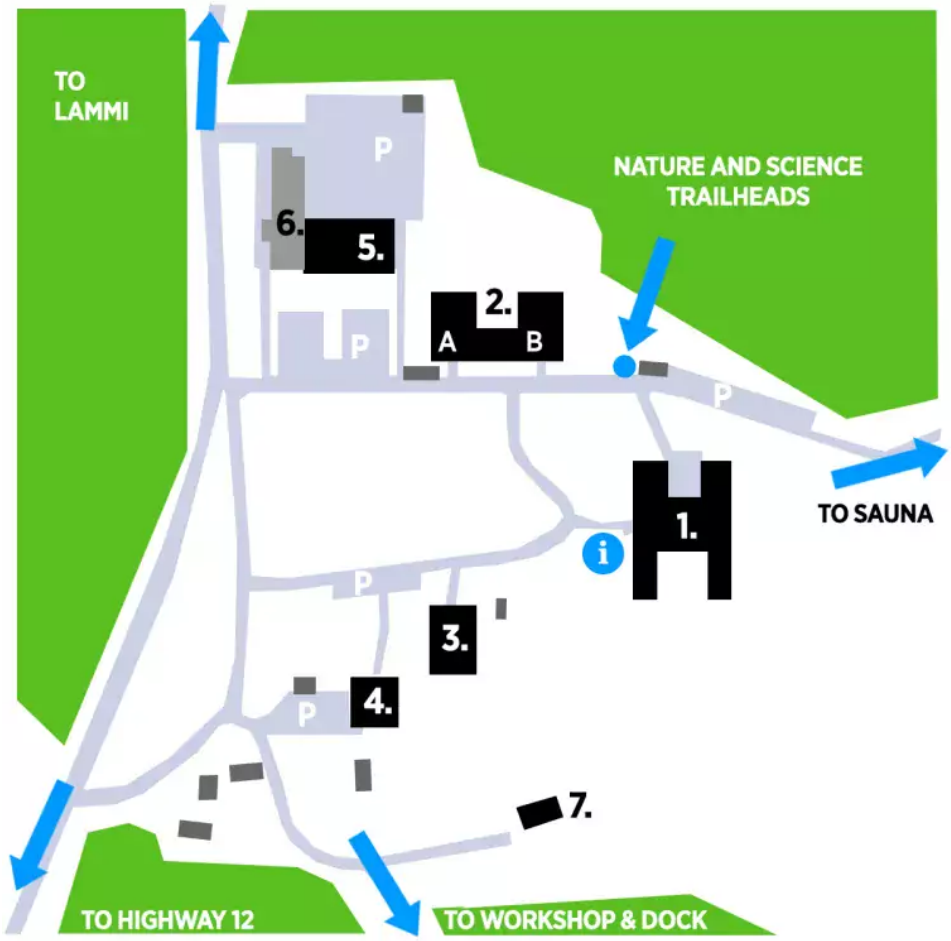

1. MAIN BUILDING
2. DORMITORY (A & B WINGS)
3. HERRALA DORMITORY
4. PIIKALA DORMITORY
5. RESEARCH HALL
6. BIO-WILLAGE (NOT UH)
7. GUEST COTTAGE

OFFICE
Open Mon-Fri 9-15
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Outside office hours
Janitor +358 (0)40 835 0192
Fee for unlocking doors: 60 €