



Nordita Winter School 2024

Particle Physics and Cosmology

Organizers: Michele Del Zotto, Paolo Di Vecchia,
Henrik Johansson, Alexander Krikun, Florian Niedermann,
Olof Ohlsson Sax, Konstantin Zarembo



Scope:

Introductory lectures in **particle physics** and **cosmology** with plenty of time for study and discussions. The school brings together students and young postdocs across different fields with different levels of experience.

Participants:

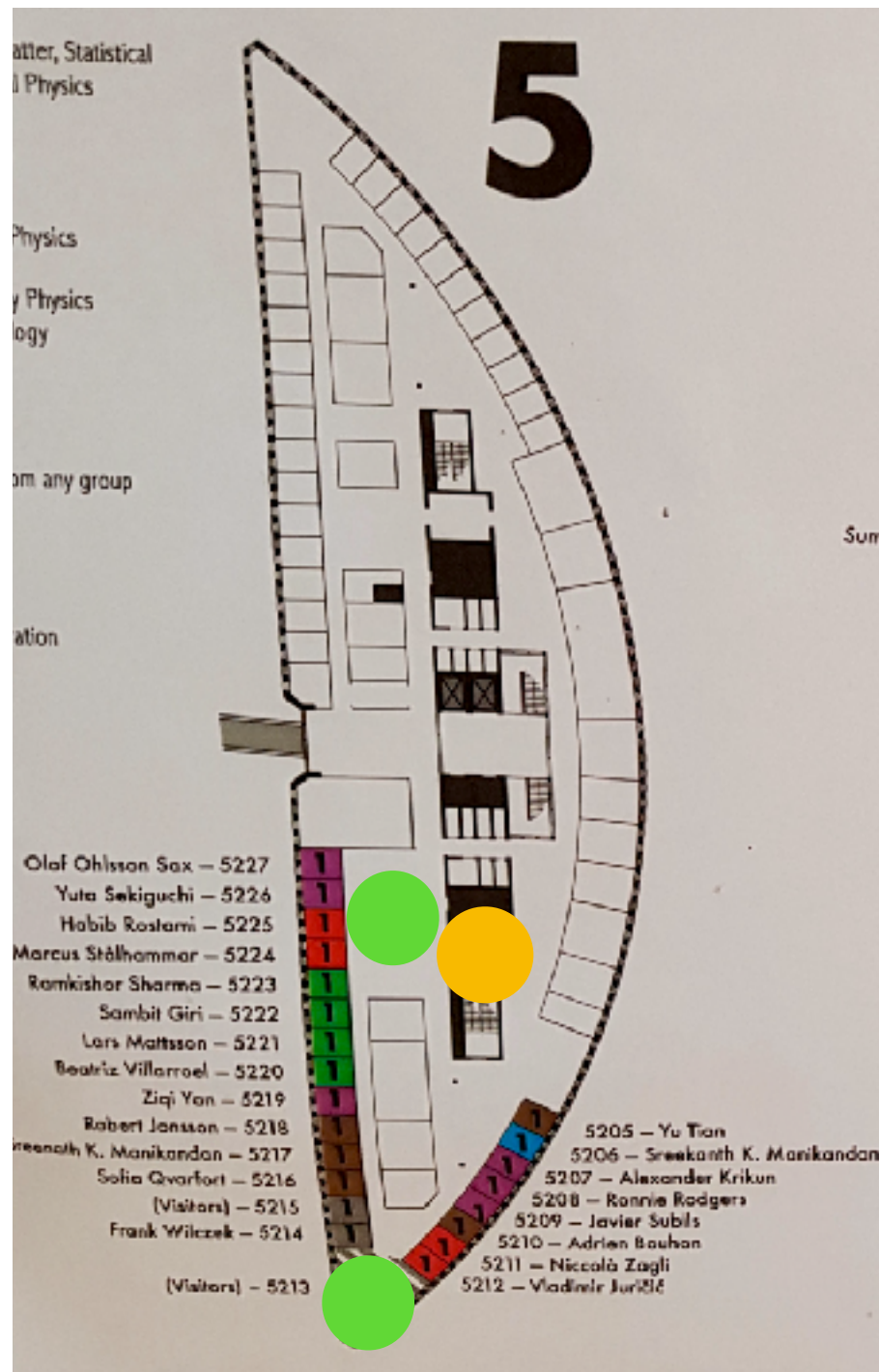
11 lecturers, 9 MSc students, 21 PhD students, and 6 postdocs

Format:

Three one-hour lectures per day.

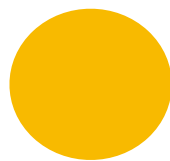
10:00 - 11:00	Lecture 1	Floor 4
11:00 - 11:20	Coffee	Floor 5,6
11:20 - 12:20	Lecture 2	Floor 4
12:20 - 14:00	Lunch	
14:00 - 15:00	Study	Floor 4,5,6
15:00 - 16:00	Lecture 3	Floor 4
16:00 - 17:30	Study	Floor 4,5,6

Door codes: Nordita floor 5 and 6: **9750**, and floor 4: **5520**. Do not share.



Workspaces:

Use the open desks throughout floor 6 and floor 5 (east wing).



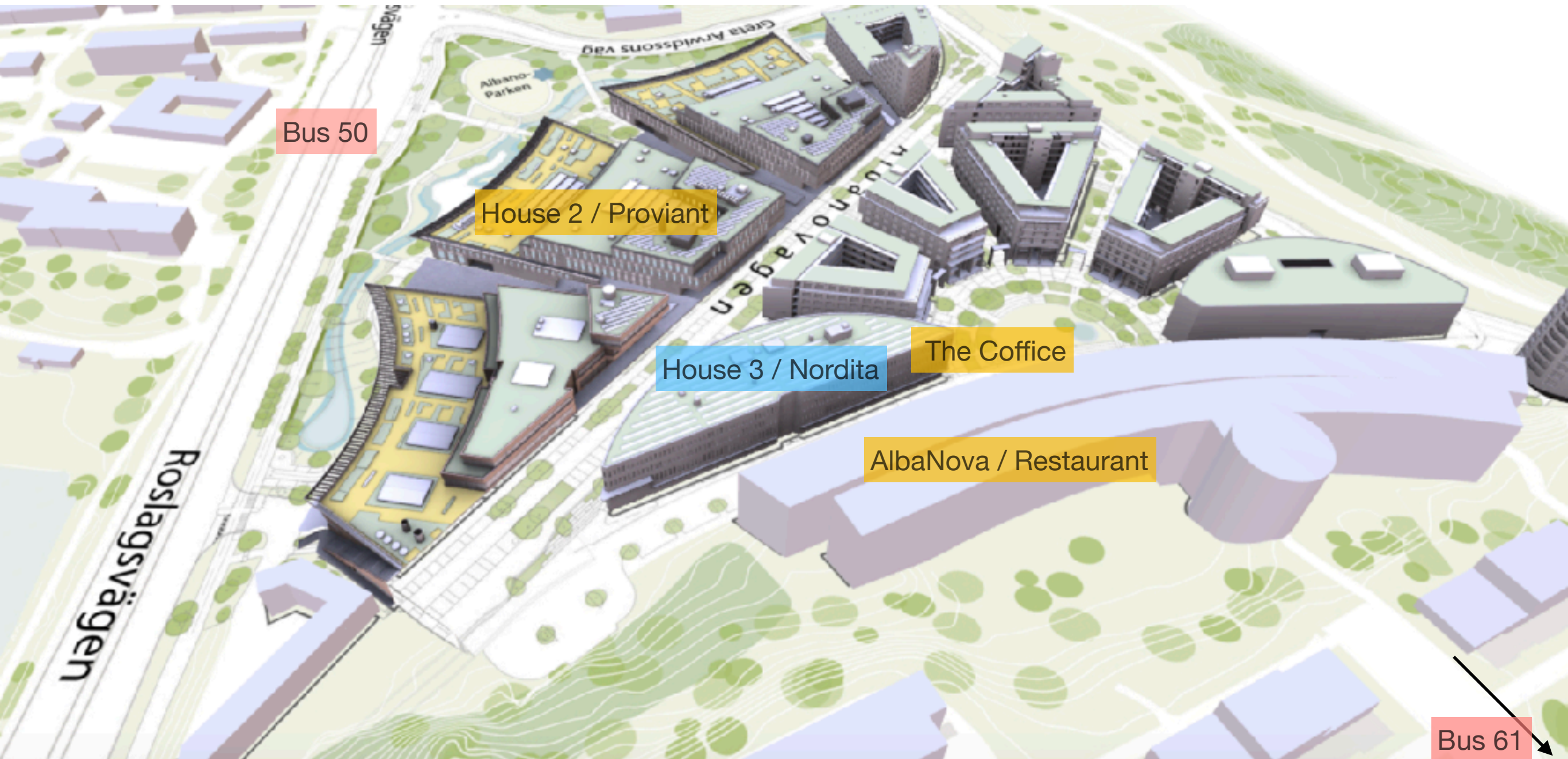
Coffee:

Help yourself to free coffee in Nordita's kitchens on floor 5 and floor 6.



Campus Albano

Lunch: Buffet style (Proviand), Menu (AlbaNova), Salad buffet (Coffice)



Bus 50

House 2 / Proviand

House 3 / Nordita

The Coffice

AlbaNova / Restaurant

Bus 61

Lectures Week 1



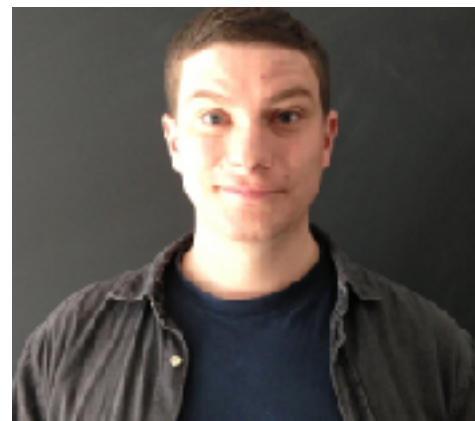
Michele del Zotto
Uppsala University
Generalized symmetries



Giulia Zanderighi
MPI, Munich
Perturbative QCD



Thomas Schwetz
KIT, Karlsruhe
Neutrino physics



Henrik Johansson
Uppsala University and
Nordita
*Gravitational amplitudes
and black holes*



Konstantin Zarembo
Nordita
Exact S-matrices



Florian Niedermann
Nordita
Introduction to cosmology

Lectures Week 2



Martin S. Sloth
Universe-Origins, SDU
Inflation



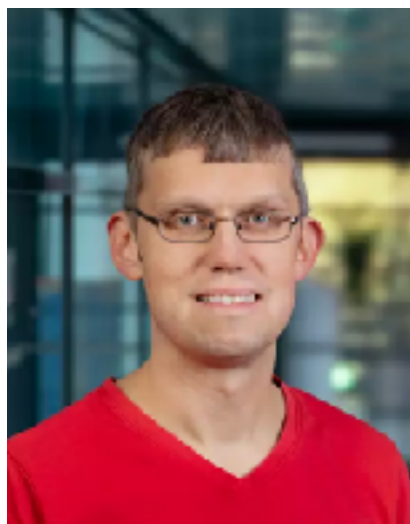
Paolo Di Vecchia
Nordita
CP(N) model at large-N



Magdalena Larfors
Uppsala University
*Machine learning and
string theory*



David Marsh
Stockholm University
*Axions in astroparticle
physics and cosmology*



Jan Steinhoff
AEI, Potsdam
*Physics of
gravitational waves*

Events



Reception:

Tuesday 16th at 18:00,
Nordita floor 6



Fika and Posters:

Monday 22nd at 16:00,
Nordita floor 6

Have your poster ready!

School Trip to Uppsala

When:

Wednesday 24 January

Where:

Uppsala, Ångström Laboratory



Event:

Inauguration of the Centre for Geometry and Physics with keynote by **Nikita Nekrasov** — *The Natural Language: geometry of physics*

School:

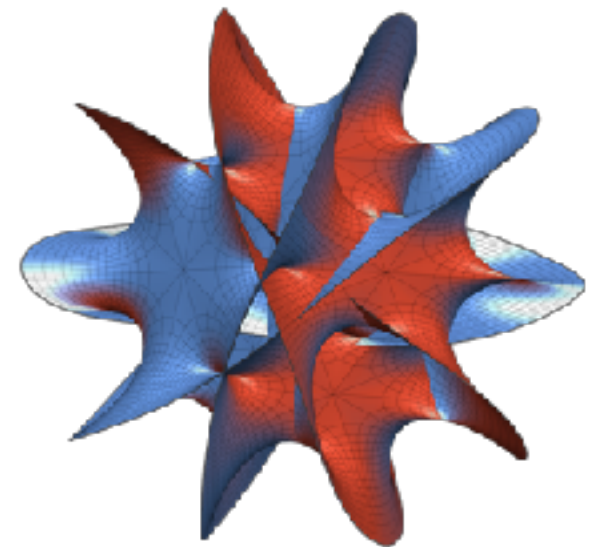
All our regular lectures will take place in Uppsala.

Travel:

Train leaves 9:06 am Sthlm Central.

Costs:

Travel and lunch are kindly covered by Geometry and Physics at Uppsala University .



Further practical information

Wifi: Eduroam is the most reliable option. Temporary WiFi codes are available to participants without Eduroam access. Contact Nordita staff.

Slack channel: For physics discussions and social activities. 

Security: There are lockers on floor 4. Do not leave valuables unattended.

Contact:



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