



Karlsruhe Institute of Technology

56. Herbstschule of High Energy Physics

Sep 02-12, 2025 in Bad Honnef

Markus KLUTE (markus.klute@kit.edu)
Institute of Experimental Particle Physics (ETP)



Federal Ministry
of Research, Technology
and Space

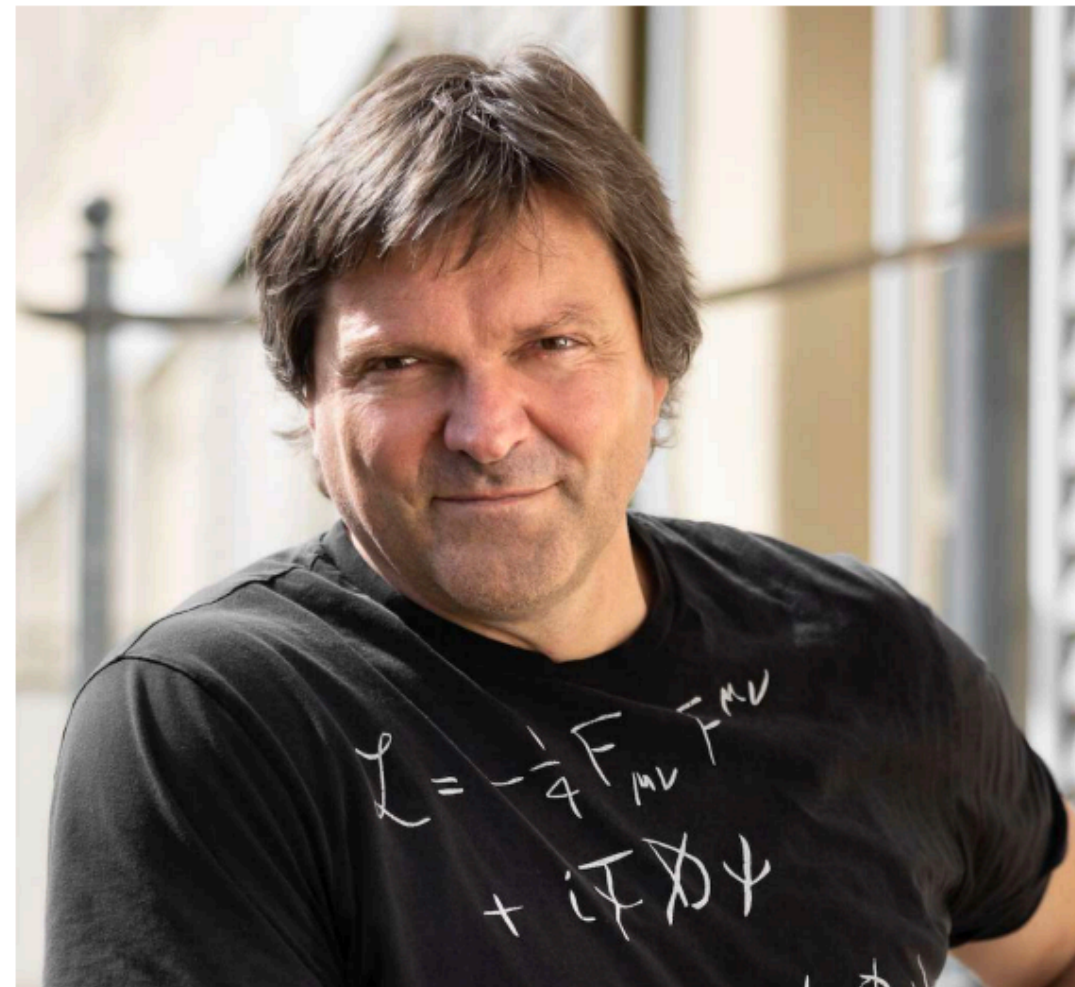
HEP Herbstschule 2025: Welcome



HEP Herbstschule 2025: Organizers



Stefan Dittmaier
Theoretical Particle Physics
Albert-Ludwigs Universität Freiburg



Alexander Lenz
Theoretical Particle Physics
Universität Siegen



Markus Klute
Experimental Particle Physics
KIT Karlsruhe

Main Lectures

- Standard Model precision physics (4h)
Steffen Schumann (U Göttingen)
- Experimental results from the LHC (4h)
Florenca Canelli (U Zürich)
- QCD and jets at the LHC (3h)
Lance Dixon (SLAC)
- Physics beyond the Standard Model (4h)
Tao Han (U Pittsburgh)
- Particle physics detectors (3h)
Jochen Dingfelder (U Bonn)
- Cosmology (3h)
Carlos Frenk (U Durham)
- Experimental lepton flavour physics (3h)
Ann-Kathrin Perrevoort (U Groningen)

- Feynman Diagrams for beginners
 - Torsten Ohl (U. Würzburg)
 - Large lecture hall
- Loop Diagrams not for beginners
 - Stefan Kallweit (U. Zürich)
 - Old lecture hall
- Neural networks for those who can do loops
 - Jan Kieseler (KIT)
 - Seminar room

HEP Herbstschule 2025: Groups

■ Group A

- Large lecture hall

■ Group B

- Old lecture hall

■ Group C

- Seminar room

Group	Session	Vorname	Nachname
A	1	Tatiana	Selezneva
A	1	Aviral	Akhil
A	1	Leonor	Santos Pereira Trigo
A	1	Monika	Wüst
A	2	Max	Beckers
A	2	Anna	Bingham
A	2	Abderahmane	Maiza
A	2	Prem	Agarwal
A	3	Chin-Chia	Kuo
A	3	Johannes	Hornung
A	3	Tobias	Bruschke
A	4	Todor	Todorov
A	4	Filip	Bilandzija
A	4	Lars	Georg
A	5	Alessandro	Brusamolino
A	5	Sofia	Giappichini
A	5	Luis	Lourenço Marques
A	6	Caio	Daumann
A	6	Ines	Pinto
A	6	Philipp	Rendler

Coordinators: Eleftheria Malami (Siegen / theory), Matteo Presilla (KIT / exp)

HEP Herbstschule 2025: Groups

■ Group A

- Large lecture hall

■ Group B

- Old lecture hall

■ Group C

- Seminar room

Group	Session	Vorname	Nachname
B	1	Elena	Cuppini
B	1	Dorian	Guthmann
B	1	Yu	Chen
B	2	Nils Benedikt	Krengel
B	2	Lara	Markus
B	2	Lorin	Armbruster
B	3	Nana	Chychkalo
B	3	Frederic	Fischer
B	3	Livio	Redard-Jacot
B	3	Marc	Hannig
B	4	Vanessa	Oppenländer
B	4	Luca	Balzani
B	4	Maximilian	Linkert
B	4	Rolando	Martinez Ramirez
B	5	Janna	Vischer
B	5	Xu	Dong
B	5	Ozan	Semin
B	6	Hendrik	Smitmanns
B	6	Marcel	Gaisdörfer
B	6	Zachary	Wüthrich

Coordinators: Anshika Bansal (Siegen / theory), Serhat Oerdek (DESY / exp)

HEP Herbstschule 2025: Groups

■ Group A

- Large lecture hall

■ Group B

- Old lecture hall

■ Group C

- Seminar room

Group	Session	Vorname	Nachname
C	1	Ida	Wöstheinrich
C	1	Lennard	Damer
C	1	Moritz	Bosse
C	2	Andre	Klotzbücher
C	2	Isabel	Sainz
C	2	Daniel	Vladimirov
C	3	Lukas	Bayer
C	3	Florian	Harz
C	3	Christiane	Mayer
C	4	Cedric	Breuning
C	4	Tim	Schlömer
C	4	Jaime	Del Palacio Lirola
C	4	Cesinger	Lucas
C	5	Victor	Schwan
C	5	Nada	Gharbi
C	5	Moritz	Molch
C	5	Jonathan	Kuper
C	6	Erik	Steinkamp
C	6	Christopher	Engel
C	6	Richard Philipp	Volk
C	6	Yağmur	Zubaroğlu

Coordinators: Matthias Kerner (KIT / theory), Ankita Mehta (CERN / exp)

- Historic View of Maria Laach
 - Thursday, 09/04, 8pm
 - Prof. Thomas Mannel (Uni Siegen)
- Preparing the Future -
The 2026 Update of the European Strategy for Particle Physics
 - Monday, 09/08, 8pm
 - Prof. Ulrich Husemann (KIT)
- Astrophysics
 - Thursday, 09/11, 8pm
 - Prof. Stefanie Walch-Gassner (Uni Köln)

HEP Herbstschule 2025: Schedule - Week 1

		Mon	Tue	Wed	Thu	Fri	Sat	Sun
			2/9	3/9	4/9	5/9	6/9	7/9
Week 1	7h30	Breakfast						
	09h00-09h55			SM - Schumann	LHC - Canelli	Detectors - Dingfelder	Detectors - Dingfelder	
	10h10-11h05			Detectors - Dingfelder	SM - Schumann	LHC - Canelli	SM - Schumann	
	11h20-12h15			LHC - Canelli	LHC - Canelli	SM - Schumann	Excerise	
	12h30	Lunch						
	14h30-16h00		Arrival	Excerise	Excerise	Excerise	Excursion	Hike
	16h30-18h00			Excerise	Groups	Groups		
	18h30	Dinner						
	20h00		Welcome by Markus		Evening 1			

HEP Herbstschule 2025: Schedule - Week 2

		Mon	Tue	Wed	Thu	Fri	Sat	Sun
		8/9	9/9	10/9	11/9	12/9		
Week 2	7h30	Breakfast						
	09h00-09h55	Cosmology - Frenk	BSM-Han	Lepton Flavour - Perrevoort	BSM - Han	QCD - Dixon		
	10h10-11h05	BSM - Han	Exercises	BSM - Han	QCD - Dixon	Lepton Flavour - Perrevoort		
	11h20-12h15	Cosmology - Frenk	Exercises	QCD-Dixon	Lepton Flavour - Perrevoort	Closeout		
	12h30	Lunch						
	14h30-16h00	Cosmology - Fre	Free	Excerise	Groups	Departure		
	16h30-18h00	Groups		Groups	Groups			
	18h30	Dinner						
	20h00	Evening 2			Evening 3			

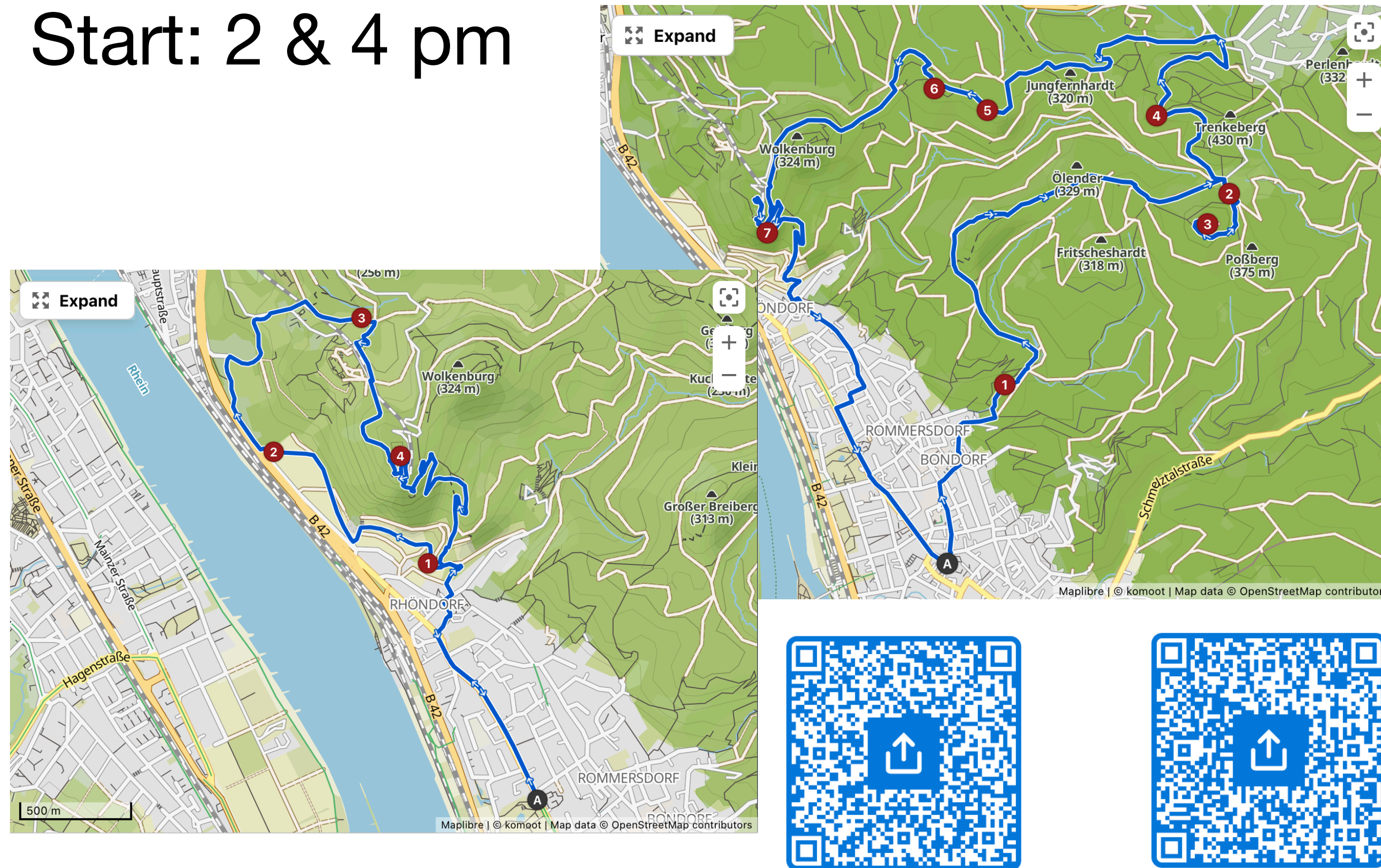
HEP Herbstschule 2025: Excursion

- Saturday afternoon
- Organized a scavenger hunt in Bonn
- Start at 2:00pm and split in 5 groups
- Each group has 5 assignments
- Sign-up sheets



HEP Herbstschule 2025: Hike

- Prepared short (8km/2h) and long (18km/4h) hike for Sunday afternoon
- Start: 2 & 4 pm



https://www.komoot.com/tour/1841051370?share_token=attdPMbGyeCVZcgrbw4uvgyYYVhzvnUikFfL7vl1bQDvHOMW72R&ref=wtd

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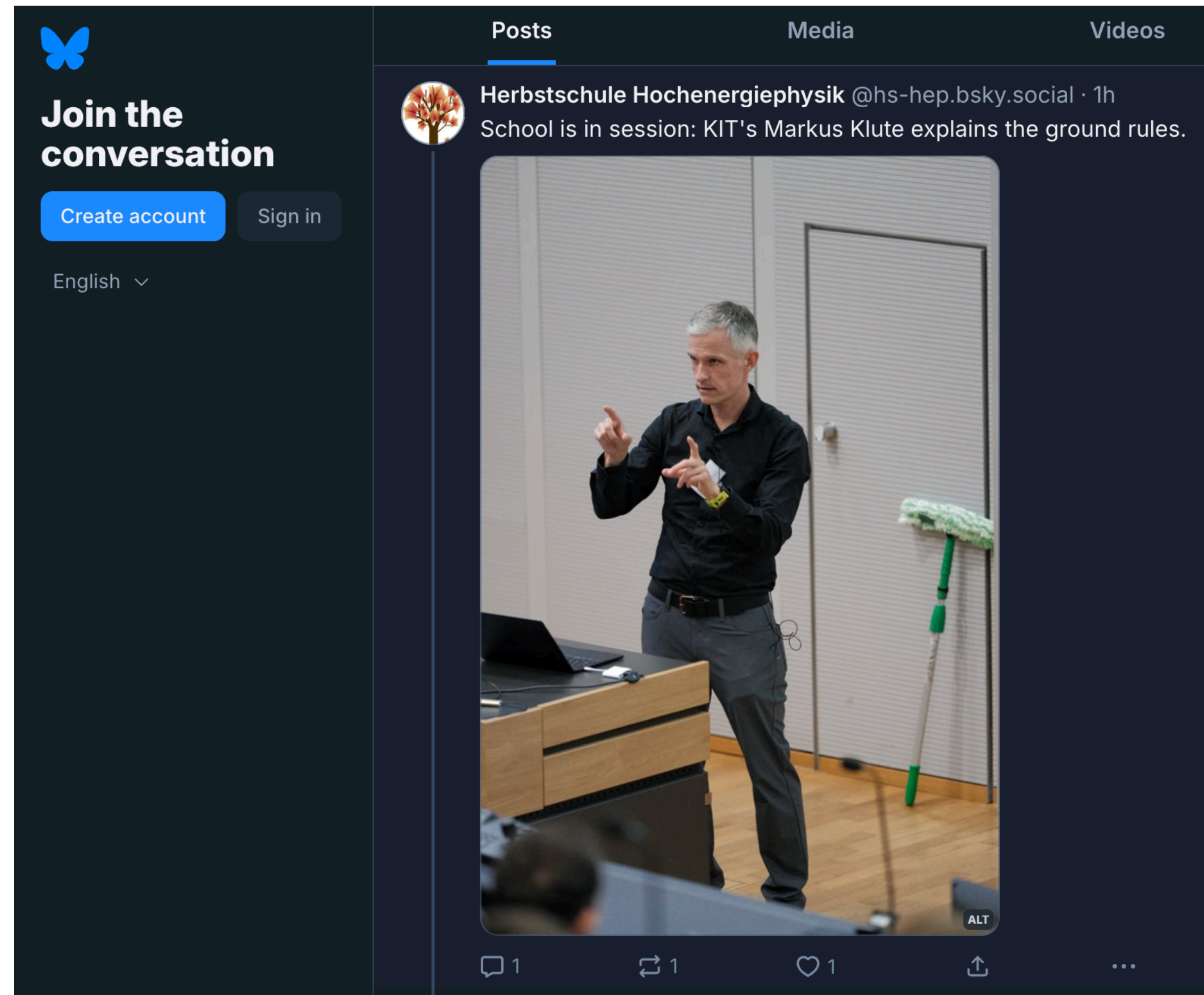
HEP Herbstschule 2025: Breakfast, Lunch and Dinner

- We assume all of you take part in all meals
- Especially during the weekend, this is likely not correct
- We will circulate sign-out sheets

HEP Herbstschule 2025: Social Media

- <https://bsky.app/profile/hs-hep.bsky.social>

#herbstschule2025



HEP Herbstschule 2025: Venue

- 1906 home for young ladies of higher descent as teachers of a household school for girls of lower descent

more information downstairs...

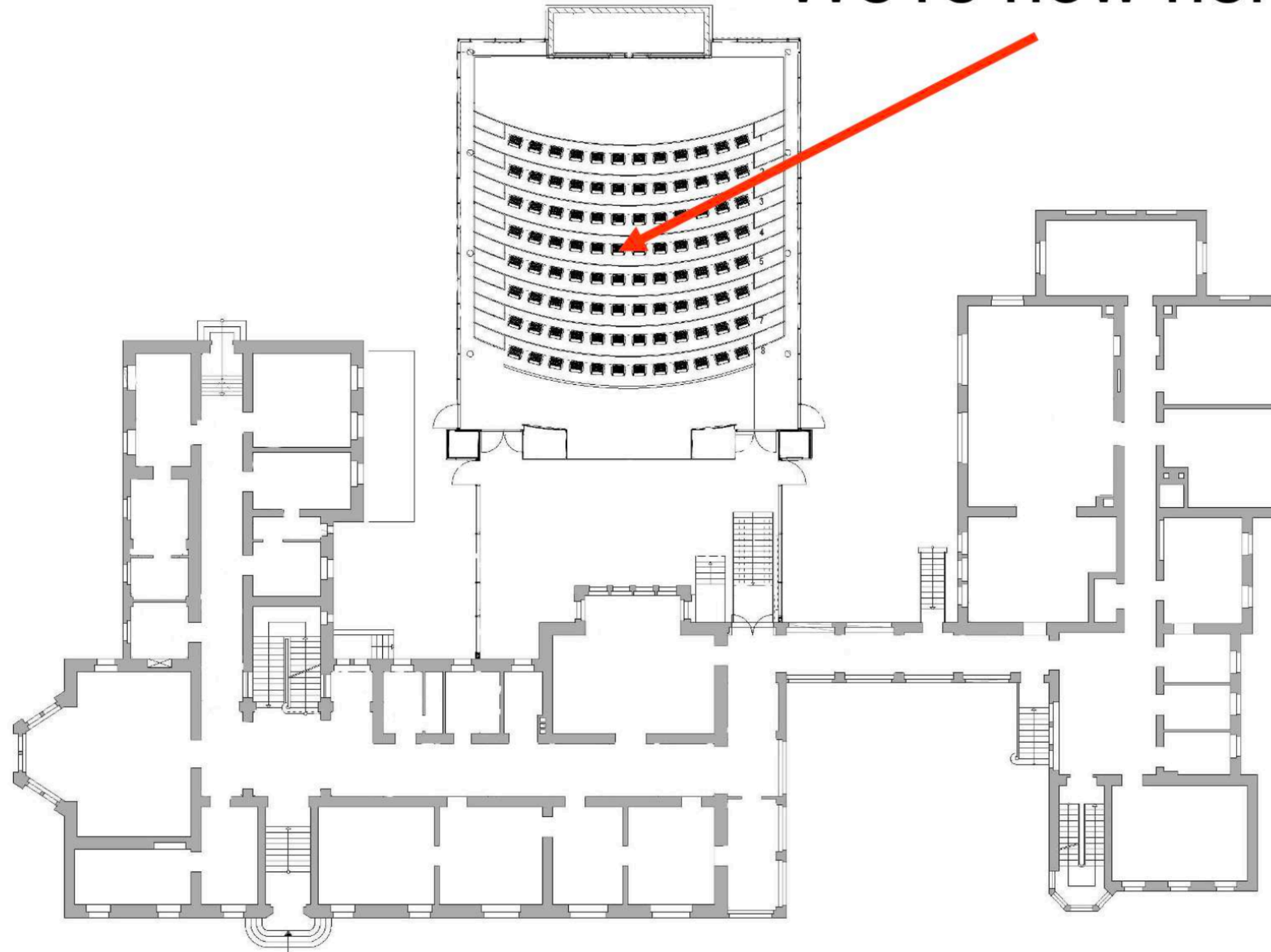


HEP Herbstschule 2025: Venue

- 1906 home for young ladies of higher descent as teachers of a household school for girls of lower descent
- since 1976 house of the German Physical Society

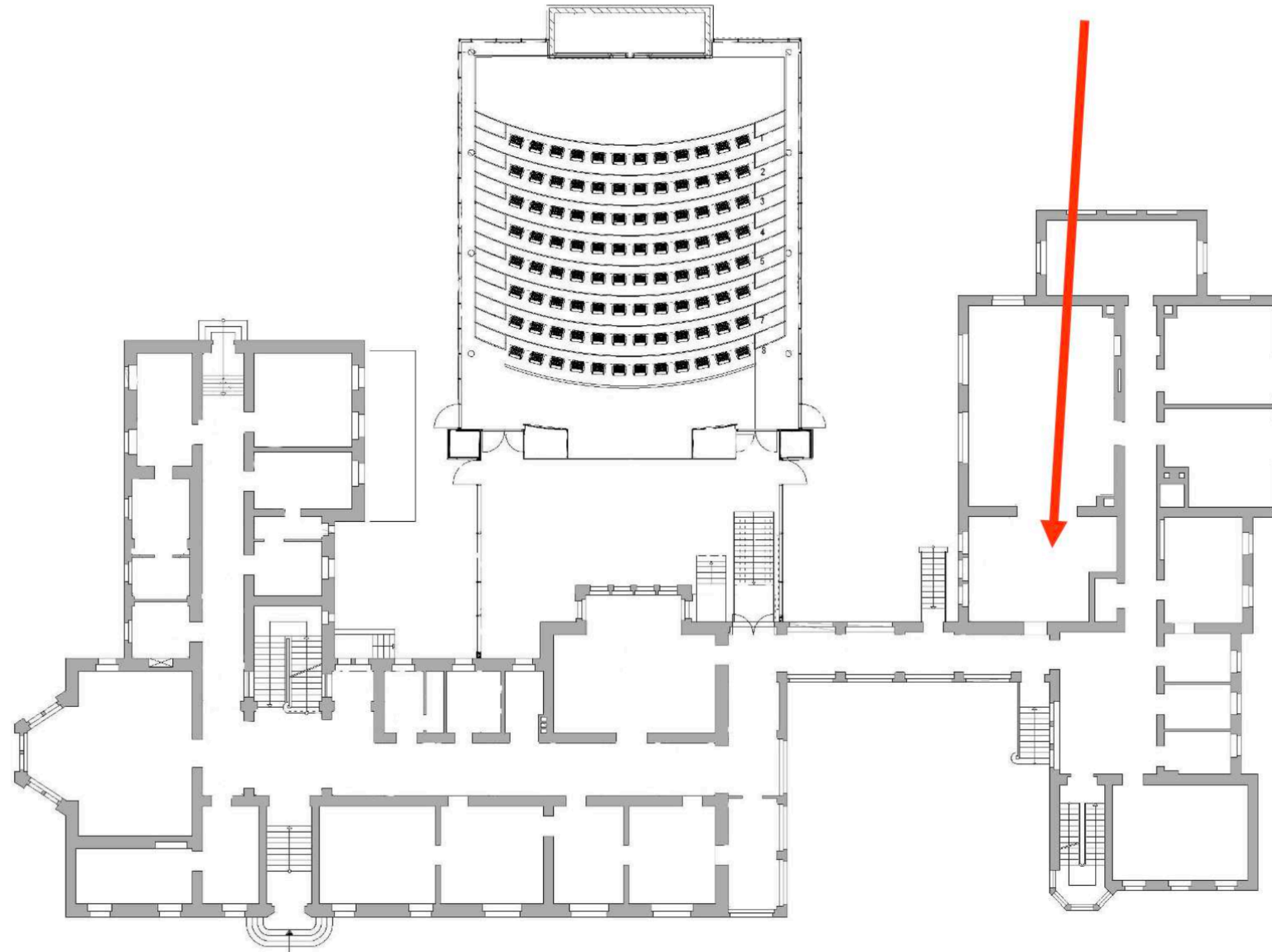


We're now here



7:30 - 9:00

Breakfast

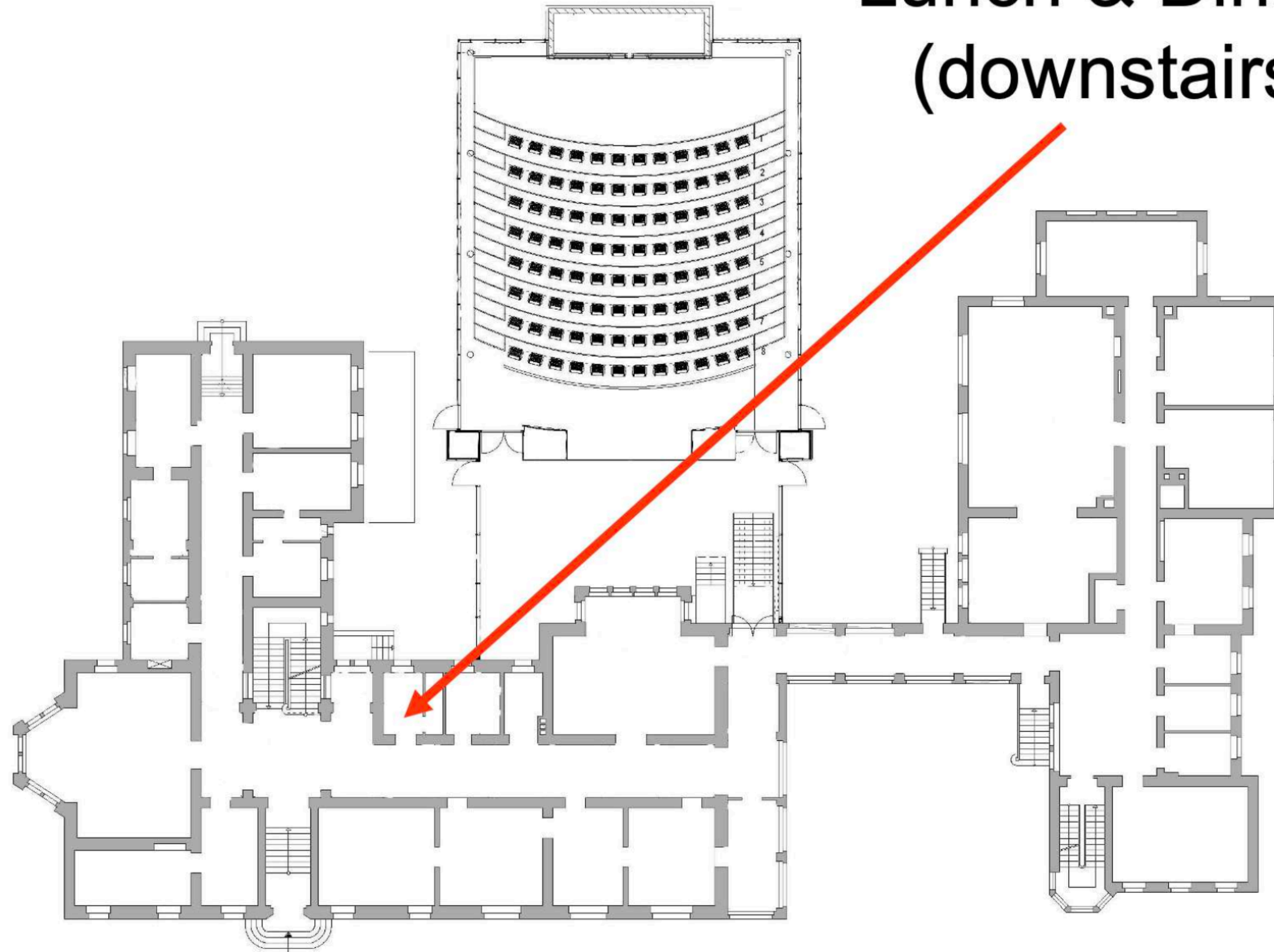


HEP Herbstschule 2025: Venue

12:30

18:30

**Lunch & Dinner
(downstairs)**



HEP Herbstschule 2025: Venue

Hard work/Fun

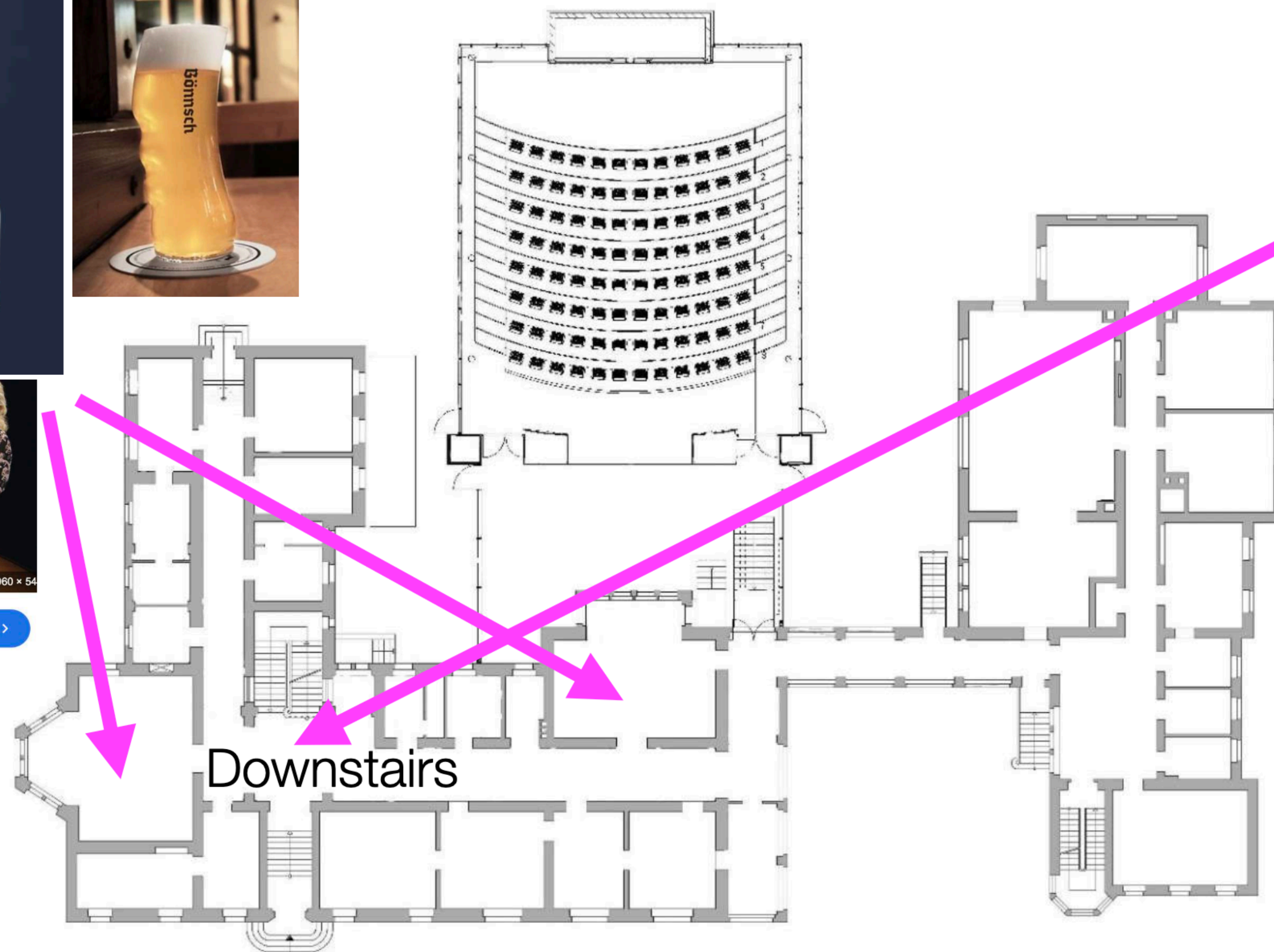


Fun



Was spricht noch für die Ehe? Der Philosophische Stammtisch

[Watch >](#)





Prevent fire



Smoking and open fire in the building are strictly forbidden

There is a smoke detector in every guest room!



Fire brigade
false-alarm-visit

costs 1000 €



In case of fire:

- Alert others (sleeping or having headsets)
- Help people with special needs
- Close windows and doors
- Leave the building:
Do not use elevator, use the stairs



HEP Herbstschule 2025: Rules

Breakfast: 7:30-9:00, Lunch: 12:30 Dinner: 18:30

Beverages (drinks ...)

-> mark at list

-> payment: on Friday until 13 a.m.

Big Water Bottles
are for free



Door code: ↪ 4711 #
or use your room transponder

Your room transponder also opens all outer doors!



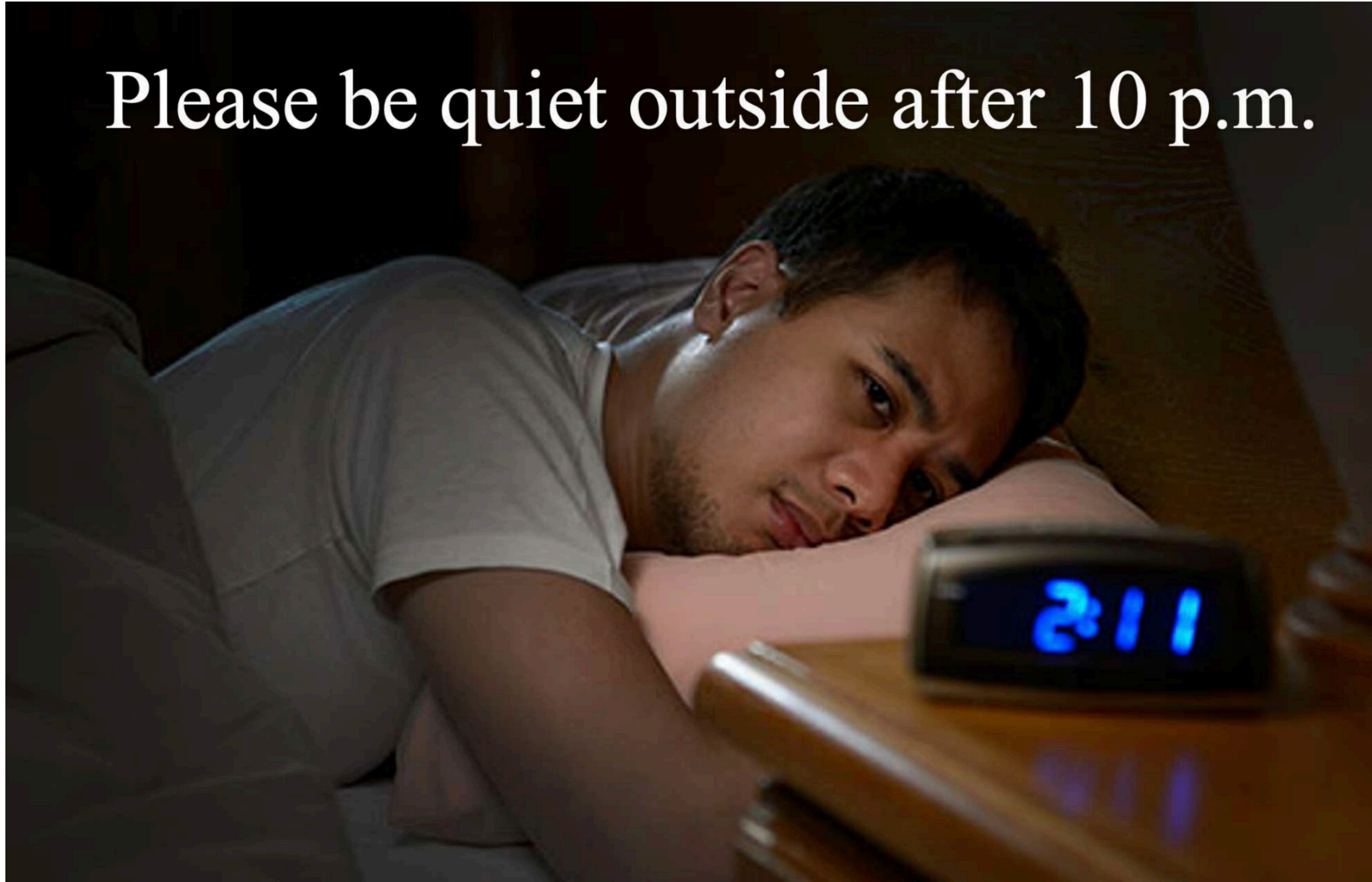
This is a transponder
signal receiver

- To unlock the door
just press
the transponder button



- To activate the lock press the transponder button
- If you don't lock your room door it will stay open!
- Keep your transponder during the whole meeting, don't put it to the key hanger!

Please be quiet outside after 10 p.m.



HEP Herbstschule 2025: Enjoy!

