

# Welcome to the School for Astroparticle Physics

Obertrubach-Bärnfels  
October 2023



ecap

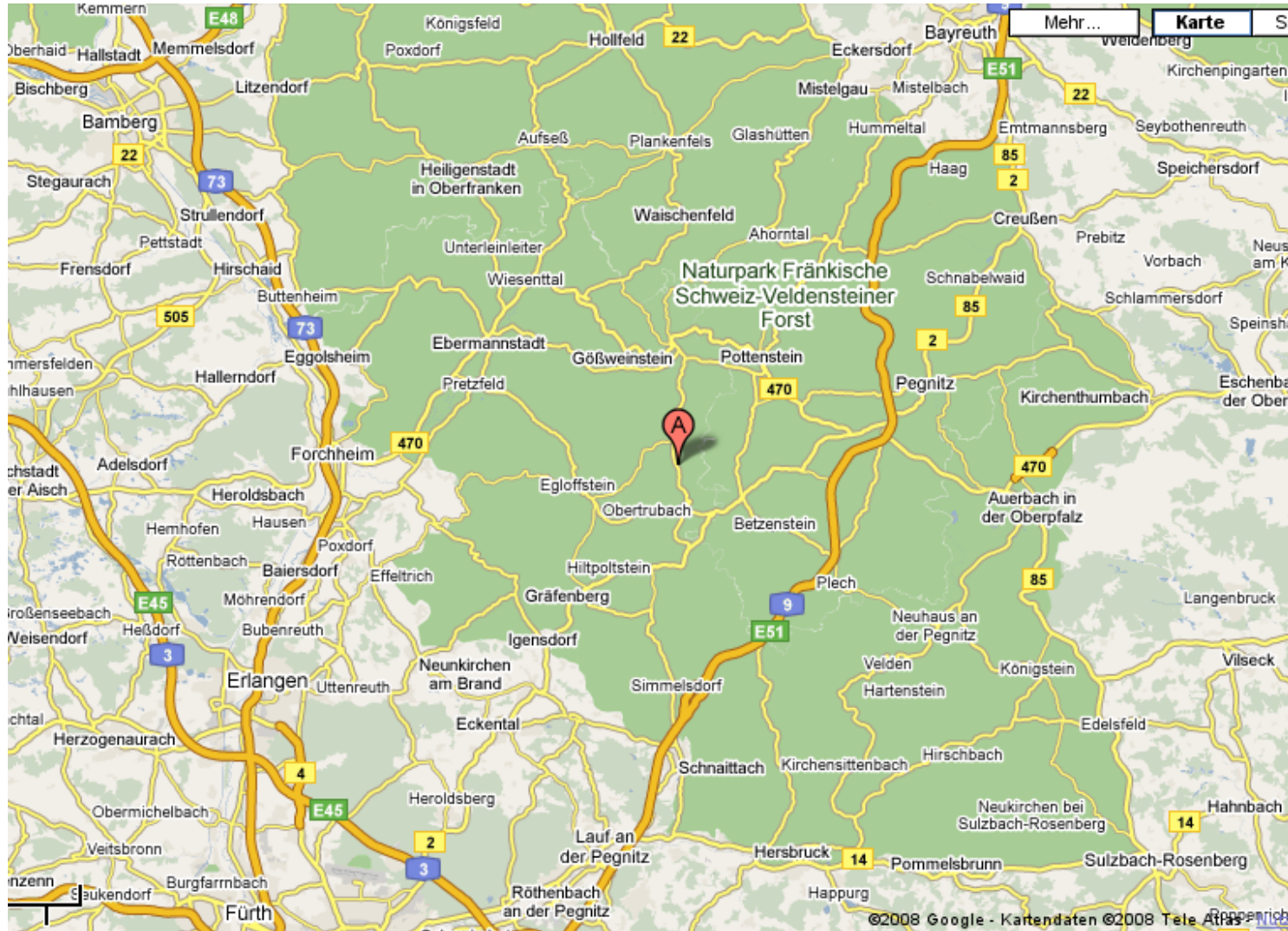
ERLANGEN CENTRE  
FOR ASTROPARTICLE  
PHYSICS

Friedrich-Alexander-Universität  
Erlangen-Nürnberg



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PHYSICS

# Bärnfels









# Bärnfels





# Bärnfels



# Bärnfels Castle

From Wikipedia, the free encyclopedia

The ruins of **Bärnfels Castle** (*German: Burg Bärnfels*) are the remains of a **late mediaeval** aristocratic **castle** on the southern edge of the village of Bärnfels in the municipality of **Obertrubach** in the **Upper Franconian** county of **Forchheim** in **Bavaria**. The ruins of the **spur castle** are freely accessible.

## History [ edit ]



Coat of arms of the lords of Egloffstein

The first record of the castle is dated 2 August 1389, when its occupants, Conrad Hans and Ulrich of **Egloffstein** zu Bärenfels had to concede their **outer bailey**, the so-called Lower Fortress (*niedere Veste*), as a **fief** following a **feud** with the **Landgraves of Leuchtenberg**. The castle had, however, been built much earlier, probably in 1330 by Siboto I of **Egloffstein**, progenitor of the Bärenfels line of this family.

In 1483 the fief went to the Gaillenreuth line of the Egloffsteins, who did not hold it for long however, because in 1495 the last enfeoffment was granted by the Leuchtenberg landgrave.

After the castle had been razed in the **Peasants' War** in 1525 by Egloffstein's subjects, it was never completely repaired again.

In 1580 the Barony of Bärnfels together with its castle ruins was sold to the **Bishopric of Bamberg** and was seized by the Bavarian state in 1802 as part of the **secularisation in Bavaria**.

Because large parts of the castle were in danger of collapse, it was demolished in the 19th and 20th centuries. In 1877 Nuremberg chemist, Kleemann, bought the site and had the few surviving remains restored.

After a further renovation was carried out in 1969 by the municipality of Bärnfels it was able to be made accessible to visitors a

Today the castle ruins of Bärnfels are once more owned by the Egloffstein family, whose ancestor probably once built the castl

Coat

Type

Coat

Height

Con

Buil

Mat

Occ



# Bärnfels



Soccer field

Gasthof Drei-Linden



# Hiking



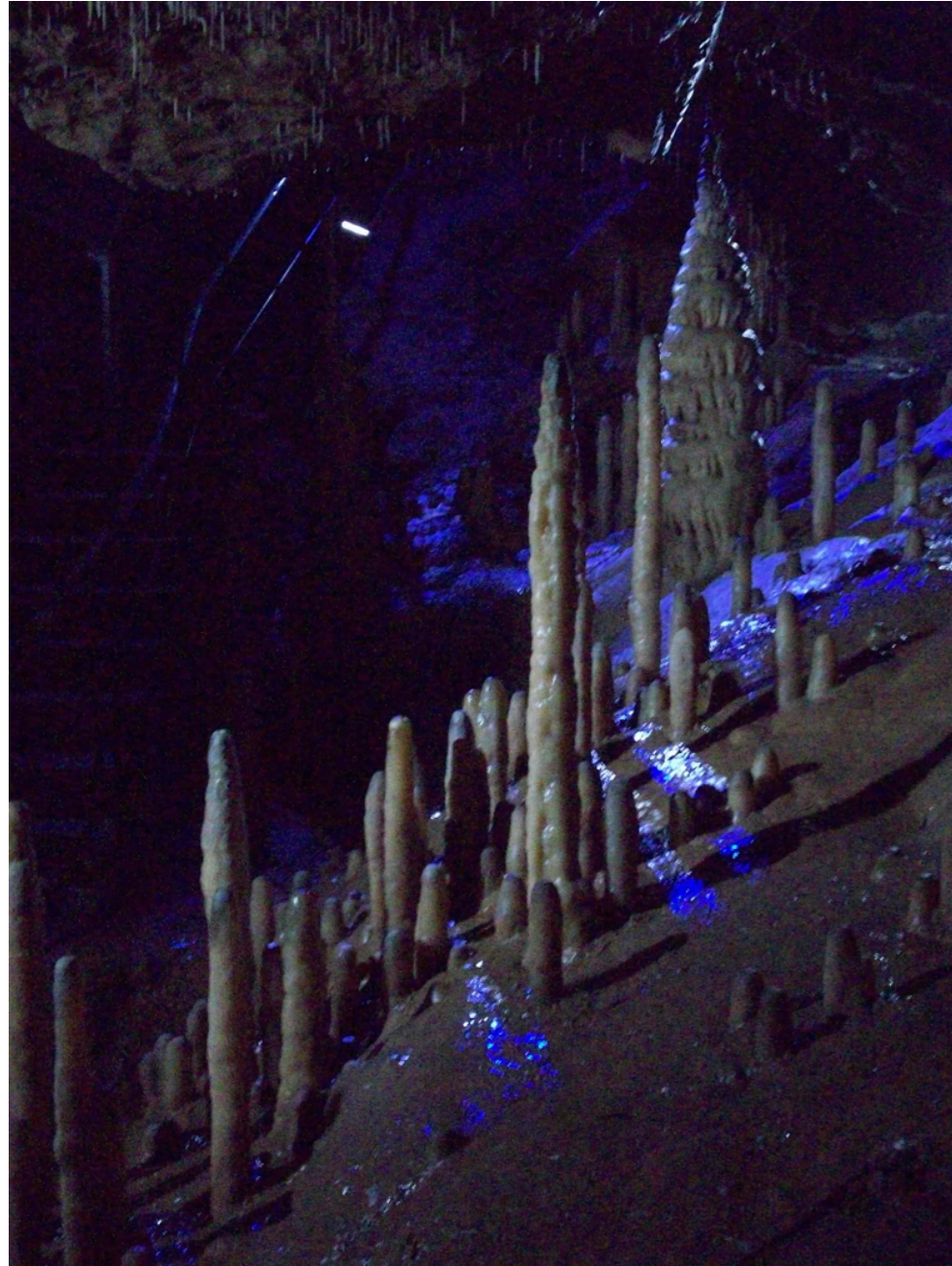


# Hiking (→ hiking maps / App Komoot)



# Hiking

cave  
in Pottenstein





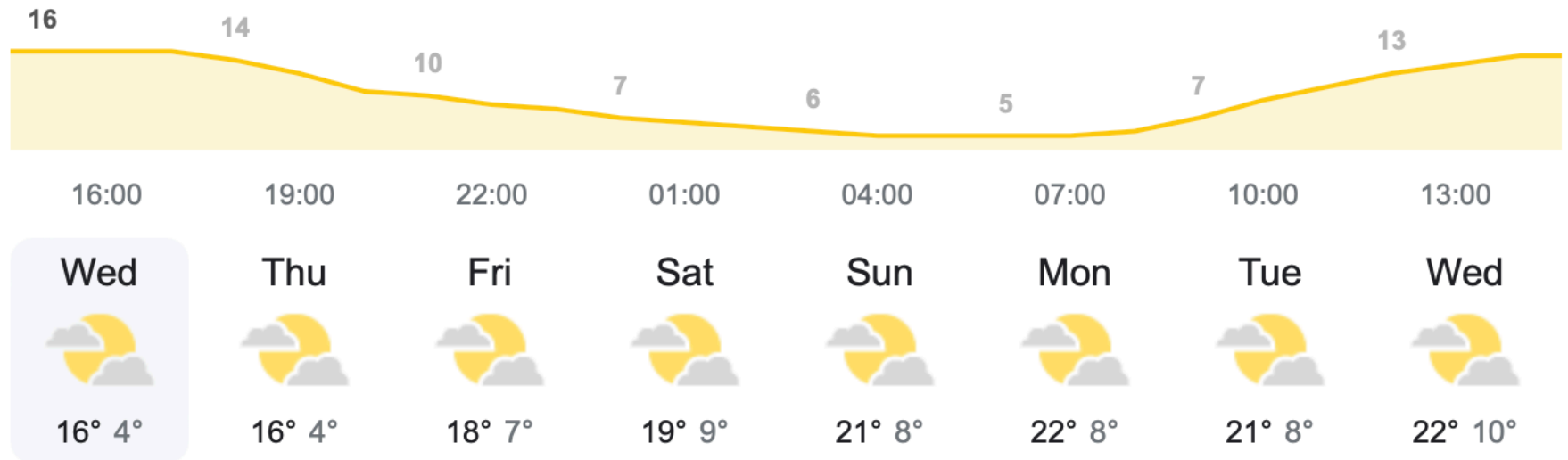
# Weather

Results for **Obertrubach** · [Choose area](#) ⋮

 **16** °C | °F  
Precipitation: 0%  
Humidity: 61%  
Wind: 11 km/h

**Weather**  
Wednesday 15:00  
Partly cloudy

Temperature | Precipitation | Wind



# Schedule: Meals & Drinks

until 8:55 Breakfast (here, also for Gasthaus Brütting)

10:45 Coffee (+...)

13:00 Lunch

15:00 Coffee & Cake

19:00 Dinner

**Meals** are included in the school fee

You have to pay for the **beverages** yourself

- You may pay directly or you pay the total amount at the end of the school
- Each single day you have to “sign” the beverages with your name and room number



# Programm

## School for Astroparticle Physics 2023

	4 Oct	5 Oct	6 Oct	7 Oct	8 Oct	9 Oct	10 Oct	11 Oct	12 Oct	
09:00 – 10:45	<b>Arrival</b>	<b>K. Schmitz</b> Pulsar timing arrays	<b>C. Hagner</b> Low.energy neutrinos		<b>Free</b>	<b>P. Mertsch</b> Galactic cosmic rays	<b>W. Springer</b> SWGO	<b>S. Heim</b> Higgs physics	<b>S. Heim</b> Higgs physics	
11:00 – 12:45		<b>C. Hagner</b> Low.energy neutrinos	<b>K. Schmitz</b> Pulsar timing arrays	<b>K. Schmitz</b> Pulsar timing arrays		<b>P. Mertsch</b> Galactic cosmic rays	<b>P. Mertsch</b> Galactic cosmic rays		<b>C. Fromm</b> Black holes	
13:00 – 15:45		<b>15:00 Opening</b>	<b>Lunch / Coffee break</b>			<b>Lunch / Coffee break</b>				
16:00 – 17:30		<b>M. Heurs</b> Gravitational wave detection		<b>C. Hagner</b> Low.energy neutrinos		<b>M. Sasaki</b> eROSITA	<b>A. Nelles</b> Proposal writing mini-workshop	<b>S. Heim</b> Higgs physics	<b>A. Nelles</b> Prop. workshop feedback	<b>Departure</b>
17:30 – 19:00										
19:00 – 20:00	<b>Dinner</b>					<b>Dinner</b>				
20:00 – 21:00				<b>C. Stegmann</b> DZA			<b>M. Hempel</b> Research funding in Germany	<b>Feedback session</b>		

# Participants talks

## Wed (Today)

Using Adversarial Attacks to Fool IceCube's Deep Neural Networks Obertrubach-Bärnfels	Mr Oliver Janik 17:45 - 18:00
Reconstruction of proton showers using H.E.S.S. Obertrubach-Bärnfels	Benedetta Bruno 18:00 - 18:15
Reconstruction methods for radio detection of air showers with LOFAR Obertrubach-Bärnfels	Ms Karen Terveer 18:15 - 18:30
Binary Black Hole Parameter Estimation using a Conditioned Masked Autoregressive Flow Obertrubach-Bärnfels	Markus Bachlechner 18:30 - 18:45
Event selection and spectrum unfolding for Supernova burst neutrinos in JUNO Obertrubach-Bärnfels	Thilo Birkenfeld 18:45 - 19:00

## Fri

Operating a LXe detector test platform Obertrubach-Bärnfels	Tiffany Luce 17:45 - 18:00
Characterization of the Response of large-area PMTs for SWGO Obertrubach-Bärnfels	Mr Frederik Wohleben 18:00 - 18:15
Design and operation of a co-deployed dust-logging instrument for the IceCube Upgrade and IceCube-Gen2 Obertrubach-Bärnfels	Anna Eimer 18:15 - 18:30
Development of an active Transverse Energy Filter (aTEF) for background reduction at the KATRIN experiment Obertrubach-Bärnfels	Ms Sonja Schneidewind 18:30 - 18:45
The XENONnT cryogenic radon removal system Obertrubach-Bärnfels	David Koke 18:45 - 19:00

## Tue

Analysing the Fermi Bubbles using improved models and datasets Obertrubach-Bärnfels	Paul-Simon Blomenkamp 17:45 - 18:00
A PIC study of particle acceleration in the stratified collisionless magnetorotational instability. Obertrubach-Bärnfels	Astor Sandoval 18:00 - 18:15
CRPropa simulations for UHECR anisotropy studies. Obertrubach-Bärnfels	Mr Simone Rossoni 18:15 - 18:30
Studies on the effects of magnetic fields on anisotropies in a catalog based search Obertrubach-Bärnfels	Mr Luca Deval 18:30 - 18:45
Modified Temperature Redshift relation and UHECR propagation Obertrubach-Bärnfels	Janning Meinert 18:45 - 19:00

## Thu

Template-based air shower reconstruction for SWGO Obertrubach-Bärnfels	Franziska Leith 16:00 - 16:15
Simulation of photon propagation in dust layers at the South Pole Obertrubach-Bärnfels	Teresa Pernice 16:15 - 16:30
Optimization of the image cleaning performance of H.E.S.S. telescopes Obertrubach-Bärnfels	Jelena Celic 16:30 - 16:45
Analyzing parameter sets resulting from modeling by using machine learning tools Obertrubach-Bärnfels	Frederike Apel 16:45 - 17:00
Data Volume Reduction for CTA Obertrubach-Bärnfels	Ms Clara Escanuela Nieves 17:00 - 17:15
GNN based Gamma/Hadron Separation with SWGO Obertrubach-Bärnfels	Martin Schneider 17:15 - 17:30
Searching for TeV pulsar halos: revisiting the H.E.S.S. Galactic Plane Survey Obertrubach-Bärnfels	Karim Sabri 17:45 - 18:00
XMM-Newton observations of SNR J0456-6533 Obertrubach-Bärnfels	Katharina Jurk 18:00 - 18:15
Search for Ultra-high Energy Neutrinos with the Pierre Auger Observatory Obertrubach-Bärnfels	Ms Therese Paulsen 18:15 - 18:30
Towards searching for ultra-high energy photons from galactic PeVatrons Obertrubach-Bärnfels	Ms Chiara Jane Papior 18:30 - 18:45
Combined fit of UHECRs with jetted AGN Obertrubach-Bärnfels	Pavlo Plotko 18:45 - 19:00

## Sat

$S^{\text{Kr}}$ N-line spectrum measurement at KATRIN Obertrubach-Bärnfels	Jaroslav Storek 09:00 - 09:15
Ultra-low intrinsic background for the direct dark matter search down to the neutrino fog with DARWIN/XLZD Obertrubach-Bärnfels	Philipp Schulte 09:15 - 09:30
The Radar Echo Telescope for Cosmic Rays Obertrubach-Bärnfels	Ms Krishna Nivedita Gopinath 09:30 - 09:45
DISCO Experiment Obertrubach-Bärnfels	Amala Augusthy 09:45 - 10:00
Mirror actuator quality assurance for CTA MSTs/LSTs & improvements to a flat-field unit for CTA-FlashCam Obertrubach-Bärnfels	Bastian Heß 10:00 - 10:15
Characterization of LAPPDs for ANNIE Obertrubach-Bärnfels	Noah Goehke 10:15 - 10:30
Supernova neutrino detection with dual-phase xenon TPCs Obertrubach-Bärnfels	Dr Sayan Ghosh 10:30 - 10:45

## Wed

Constraining the VSR origin of graviton mass through binary pulsars Obertrubach-Bärnfels	Alessandro Santoni 16:00 - 16:15
KM3NeT/IARCA offline follow-up of X-rays flares of Extreme Blazar sources Obertrubach-Bärnfels	Maria Rosaria Musone 16:15 - 16:30
Reconstruction of faint non-standard model particles in IceCube Obertrubach-Bärnfels	Nick Jannis Schmeisser 16:30 - 16:45
Tuning of the Pythia8 hadronic interaction model for simulations of UHECR induced air showers Obertrubach-Bärnfels	Chloé Gaudu 16:45 - 17:00



# Participants talks

- your talk (→ see schedule [Indico])
- 12 + 3 minutes
- time alert
- sessions will be chaired by participants
  - we are looking for volunteers!

## Lectures and talks

- Please attend all lectures and talks
- Please don't open your computer in the lecture room



## Further information...

- Name badges – please wear them!
- Confirmation of participation
- Group photo
- Data sharing consent form
- Evaluation

**School for Astroparticle Physics**  
5 to 13 October 2022 Obertrubach-Bärnfels



Prof **Uli Katz**

ECAP Erlangen

## Further information

- Access to the internet
- Mobil phones
- Soccer
- Hiking – hiking maps available
- Sunday
  - High ropes course
- Board games, playing cards...



ssid: NCC-1701-D  
pass: F118o5g0niW  
1=one  
l=letter "L"



# Questions

- This is a school!
- Please ask questions!
- Ask questions during lectures, during breaks, at lunch at dinner....



# Have fun with physics !