

Herbstschule
HEP

formerly Maria Laach

Herbstschule of High-Energy Physics

A school with a long tradition, or
Why is this the 56th School?

Thomas Mannel, University of Siegen
4.9.2025

Once upon a time ...

- ... there was a School for High Energy Physics,
- ... taking place every year in the monastery of Maria Laach
- ... where we were guests of the Benedict monks living there
- ... which I co-organized for almost a quarter of a century



50. Herbstschule für Teilchenphysik, Maria Laach, Sept. 4–14, 2018



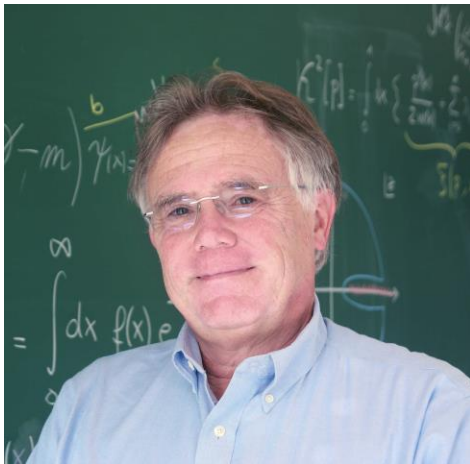
- Since 2024: The new venue is the Physikzentrum in Bad Honeff



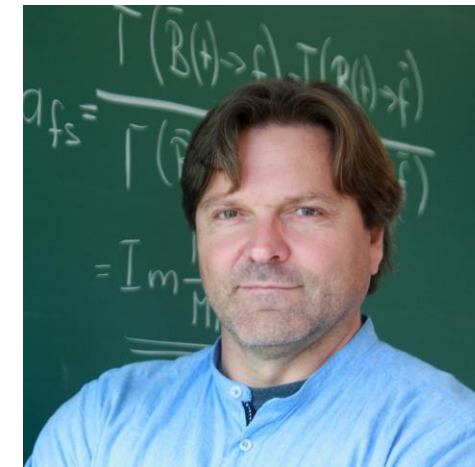
- Less and less support in the monastery
- Enormous price hike
- All infrastructure had to be delivered from Bonn
- ... almost no IT infrastructure
- The language was German because of the monks



- Since 2024: New Orga-Team



Thomas
Mannel
(Siegen)



Alexander
Lenz
(Siegen)



Orga-Team: Old and New

M. Klute (new)

S. Dittmaier (old and new)

T. Mannel (old)

S. Bethke (old)

A. Lenz (new)

R. Rückl (older ...)



Herbstschule of High-Energy Physics

Menue

1. How comes that a HEP school is in a monastery?
2. Particle Physics and 56 years of Herbstschule
3. People, who shaped the school ...
4. Some impressions of how it was ...
5. Outlook ...



How it all started ..

- In 1960 DESY started in Hamburg, Establishment of Particle Physics in Germany
- Almost no possibilities to train young particle physicists in Germany
- Courses held at DESY for PhD students: conflict with the „daily business“
- **Solution: Organize a PhD School at a place with no distractions!**



Hans Bielein (Bild) & Gerhard Nöldeke



Prerequisites ...

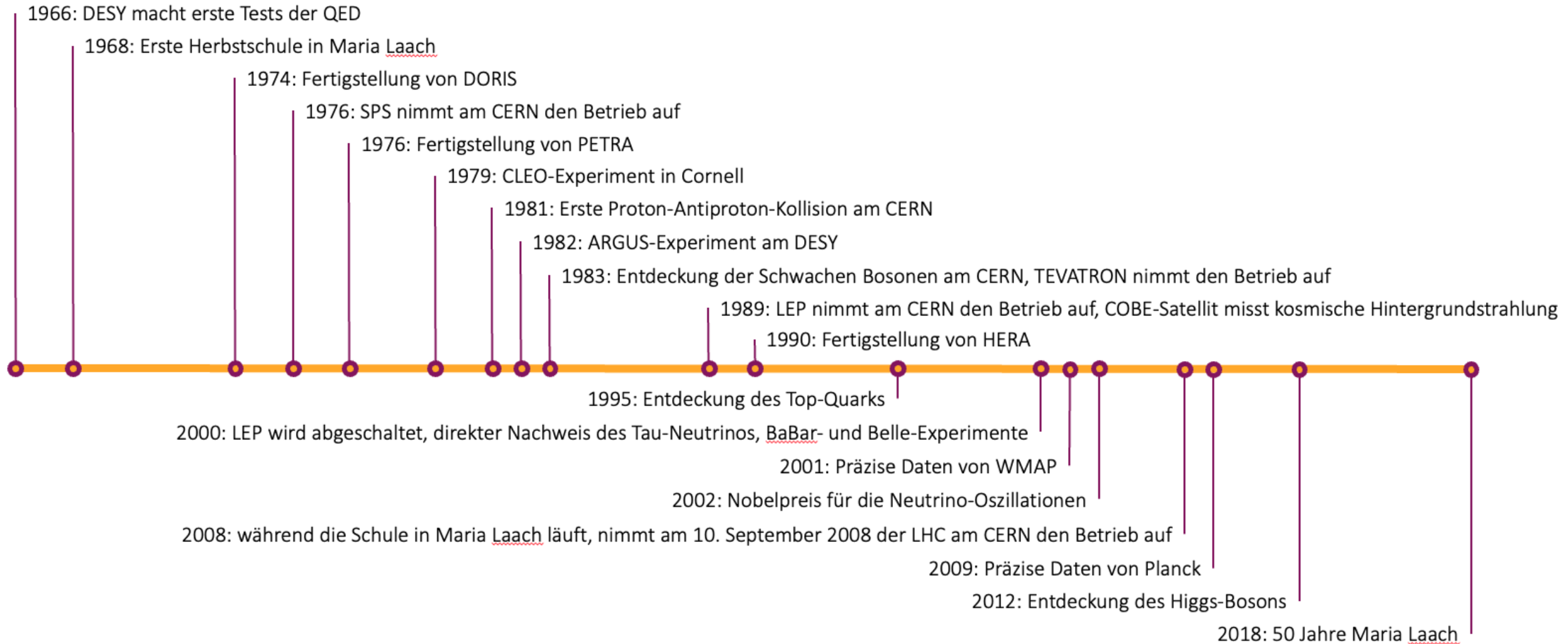
- It should be in the middle of nowhere ..
- Low priced accommodation
- Easy to be reached from all places in (West)Germany
- Close to a university, which can supply the school materials

Solution: The Monastery of Maria Laach

- There is a nice Aula for the lectures
- Nobel Laureat Wolfgang Paul had Contacts to Abott Urabanus
- 1968: Very first School on High Energy Physics in Maria Laach
- The school format remained almost the same over the decades

Particle Physics and 56 Years of Herbstschule

- During the School many discoveries were made
- ... and have subsequently been absorbed into the school program



Herbstschule of High-Energy Physics

1968-1995

Topics from CERN and DESY, Physics at PETRA, SPS, SPPS as well as Topics from non-accelerator physics, Lectures on electro-weak theory and on QCD, Lectures on Quark-Flavour-Physics

Lectures on HERA und LEP-Physics ab ca. 1987

Lectures on HERA- and LEP-Physics, Neutrino physics, Quark-Flavour-Physics, including theoretical lectures 1995-2000

Preparatory lectures for LHC, incl. accompanying theory lectures ab 1995

Lectures on Physics at the TEVATRON ab 1998

Lectures on B-Physics, incl. accompanying theory lectures ab 2000

Lectures on Astro-Particle Physics ab ca. 2000

Lectures on Cosmology ab 2003

Aside from topical issues also

- Technology of Detectors
- Data Analysis
- Physics and Technology of Particle Accelerators
- Non-accelerator Particle Physics
- Future Projects of Particle Physics
- ...

The lecturers and the Tutors ...

- Lecturers: A mix of "Big Shots" and Early Career Scientists

Hitoshi Murayama



Roberto Peccei



Michael Peskin



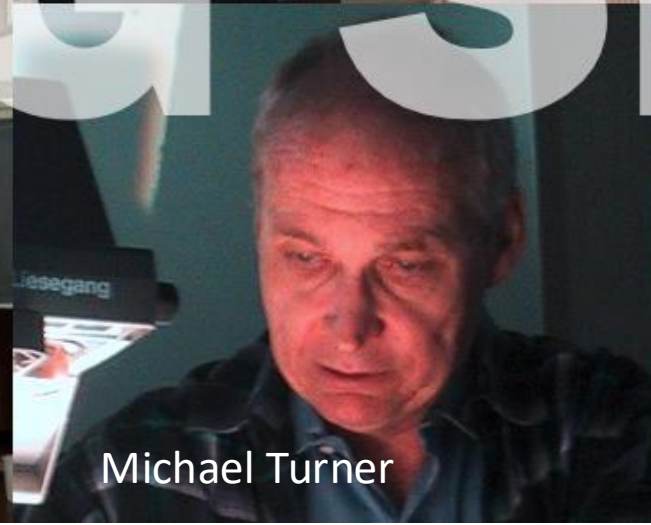
Nima Arkani Hamed



Sally Dawson

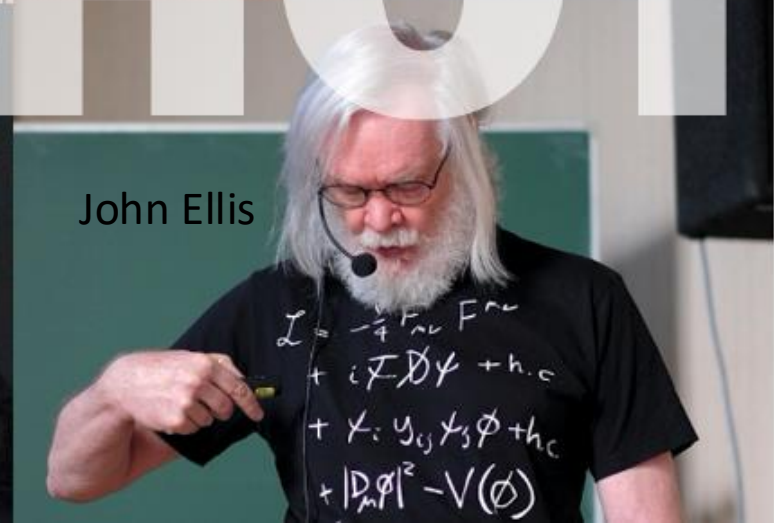


Keith Ellis



Michael Turner

John Ellis



Guido Altarelli



The lecturers and the Tutors ...

- Lecturers: A mix of "Big Shots" and Early Career Scientists
- Usually we did not invite people twice
- ... except for the tutors running the exercises



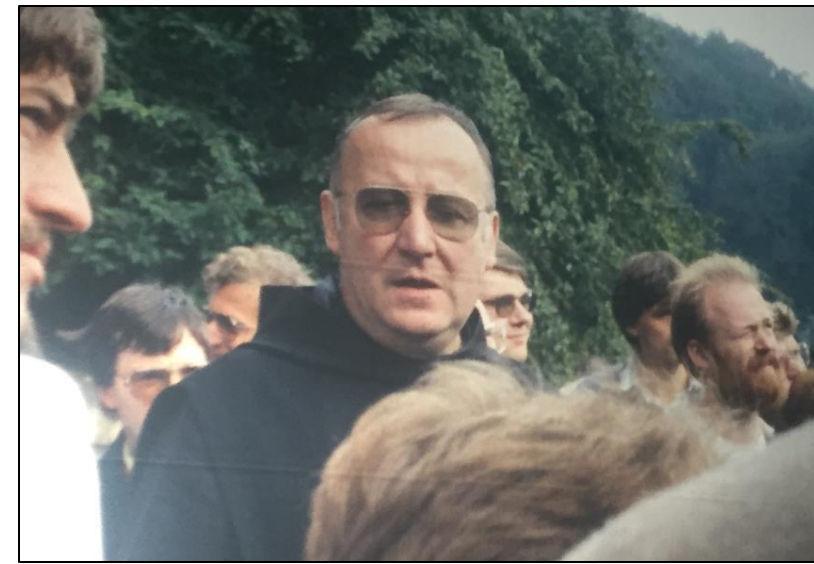
Major exception: Thorsten Ohl (Wuerzburg),
Feynman Diagrams for beginners since a quarter
of a century ...

(1984)

People, who shaped the School

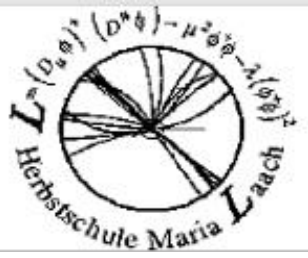
Pater Athanasius

- He was in charge of all the guests in the monastery
- He always gave a talk on "how to live in a monastery"
- ... including a subsequent discussion, sitting together and drinking a few bottles of wine
- My favorite quote: "One must be able to abstain from a sacrifice"
- He took care of the school from its start until 2013



(2011)





Our hosts: The monks of Maria Laach

- Abbot and Prior
- All the monks that took care in addition to Pater Athanasius
 - Pater Wigbert
 - Pater Viktor
 - Pater Timotheus
 - Bruder Michael
 - Bruder Simeon
- Many of them are not in Maria Laach any more (or even passed away)



Patres Athanasius, Timotheus and Victor (2008)



Dinner at Pater Athanasius' most favored place (2008)

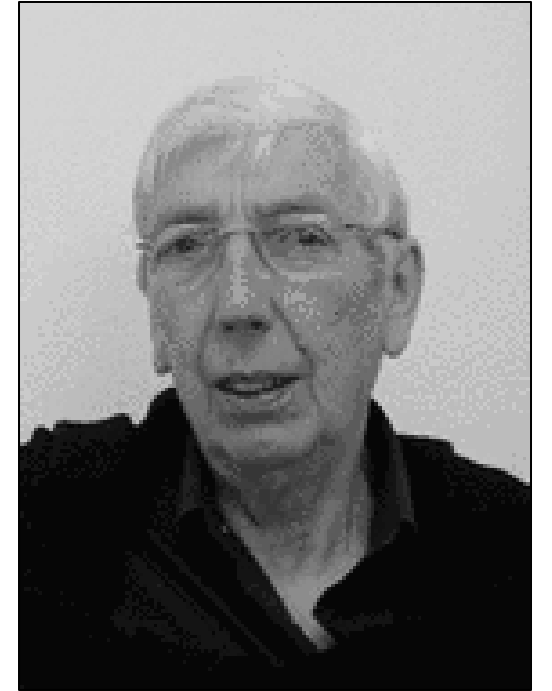
Bonn University had the patronate ...



Erwin Hilger (middle) at the school in 2005



Klaus Desch



Udo Idschok did all the Logistics of the school for more than 20 years.

BMBF und PT-DESY

- BMBF Referat 71
- BMBF Referat 711
- PT-DESY:



Bundesministerium
für Bildung
und Forschung



PT-DESY
Projekträger DESY

The Organizers

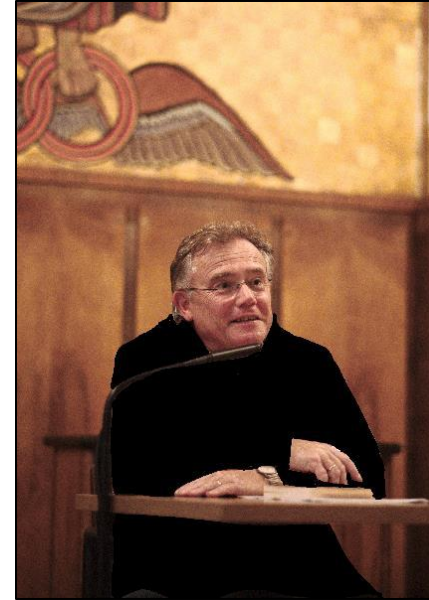


Hans Bienlein (l., 1968 -1978)

Hans Dieter Dahmen (r., 1978 - 1997)



Siegfried Bethke



Thomas Mannel



Reinhold Rückl



Stefan Dittmaier

- 1998 to 2013: Siegfried Bethke, Thomas Mannel und Reinhold Rückl
- 2014 to 2023: Siegfried Bethke, Stefan Dittmaier und Thomas Mannel
- ... And now there is a new team, to carry this into the future!!

Some impressions from the monastery



Lecture hall



The rooms at the monastery



Lunch with the monks ...



Lunch room for the guests

Everybody had to help,
and could learn ...



Lunch with the monks



.. and could earn a
valuable certificate!



Lunch break in the garden of the monastery



Lunch break in the garden of the monastery



Ten days are long and exhausting

Outlook

- The Herbstschule is one of the oldest school in particle physics
- Its format and concepts are copied by some other schools
- It is a stepstone for many particle physics careers
- .. and it is well renowned in the German particle physics community



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