Outreach Activities ETH Zurich

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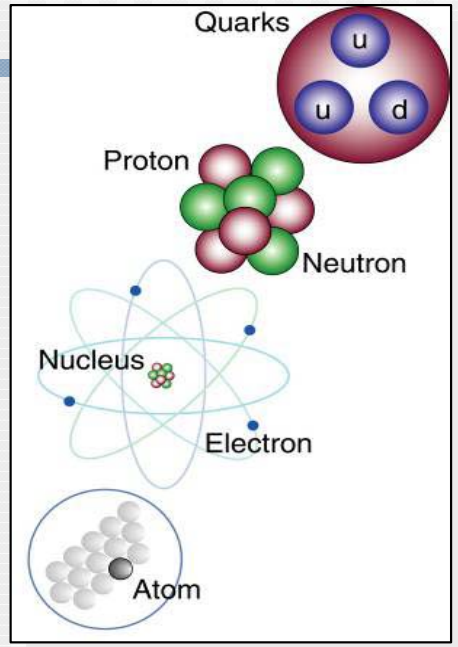
ETH Institute for Particle Physics

How to Teach Particle Physics and use e-Tools



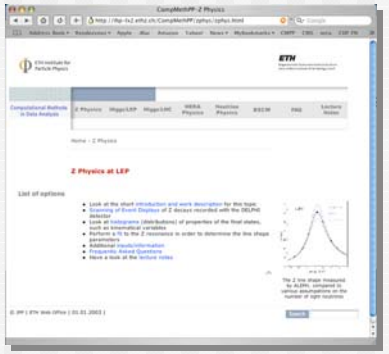
- We give lectures to High-school teachers within standard "Fachdidaktik Physik"
  - how to convey particle physics to students at the high-school level.
  - Practical examples: "close to research"; we use Lep-physics, or now also LHC.
  - let the teachers take the tools and apply them themselves in class.

- Note: there is now a special "ETH Förderprojekt" ***"Innovedum"*** .
  - Innovedum is a fund established by the Rector to finance initiatives which explore new ways to sustainably improve teaching and learning.

www.innovedum.ethz.ch

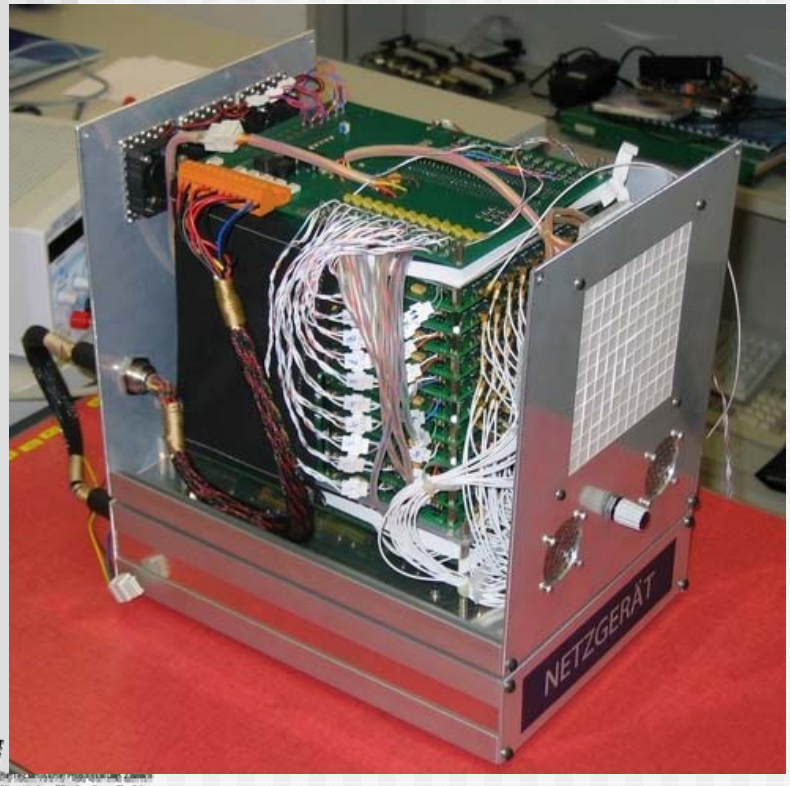
Learning “close to research”

- Particle Physics events for high-school classes
  - Show particle physics to the students at the high-school level.
  - let them work on practical examples: “close to research”; using Lep-physics (similar to MC, see below)
  - We visit the high-schools
    - established contacts through personal contacts
    - through the official ETH table of offers “list of outreach activities” for interested high-schools, and other groups.



ETH unterwegs

- We visit high-schools (~10 per year) for typically 2-3 days.
  - We have a "Physics stand": presently dominated by particle physics
  - we use cosmic ray detector to show cosmic muons live.
  - and have animations and explanations for students.



CORACU
cut open

we use 11x11 scintillators
with APD mounted on face

ETH unterwegs

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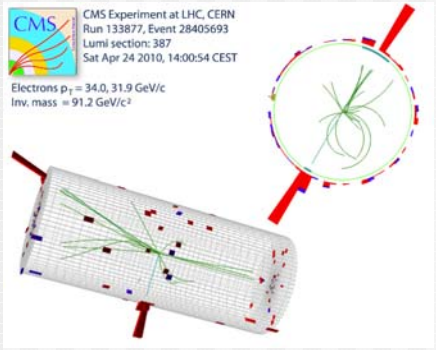
- Several actions happen:
  - Action day with exhibits, stands and special actions;
  - Topical talks for special classes (Schwerpunktsfach ..), talks for the public (not just students)
  - Podium-discussions ….



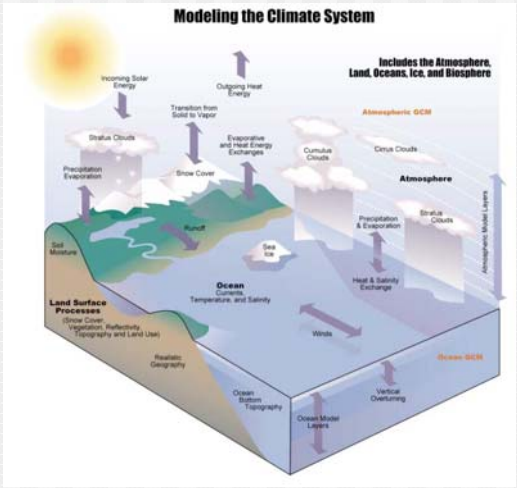
Studienwoche for High-School students

High-school students visit ETH for one week to do “Physics”. Topics are

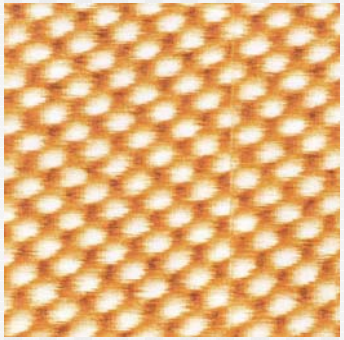
- Nuclear/particle physics: mass spectroscopy (in collaboration with the ion-physics lab) → carbon-14 dating of materials they bring themselves

- Astrophysics/Astronomie: observations of planets, sun…

- Physics of Climate: Modeling the climate system and visualise effects of input variations.

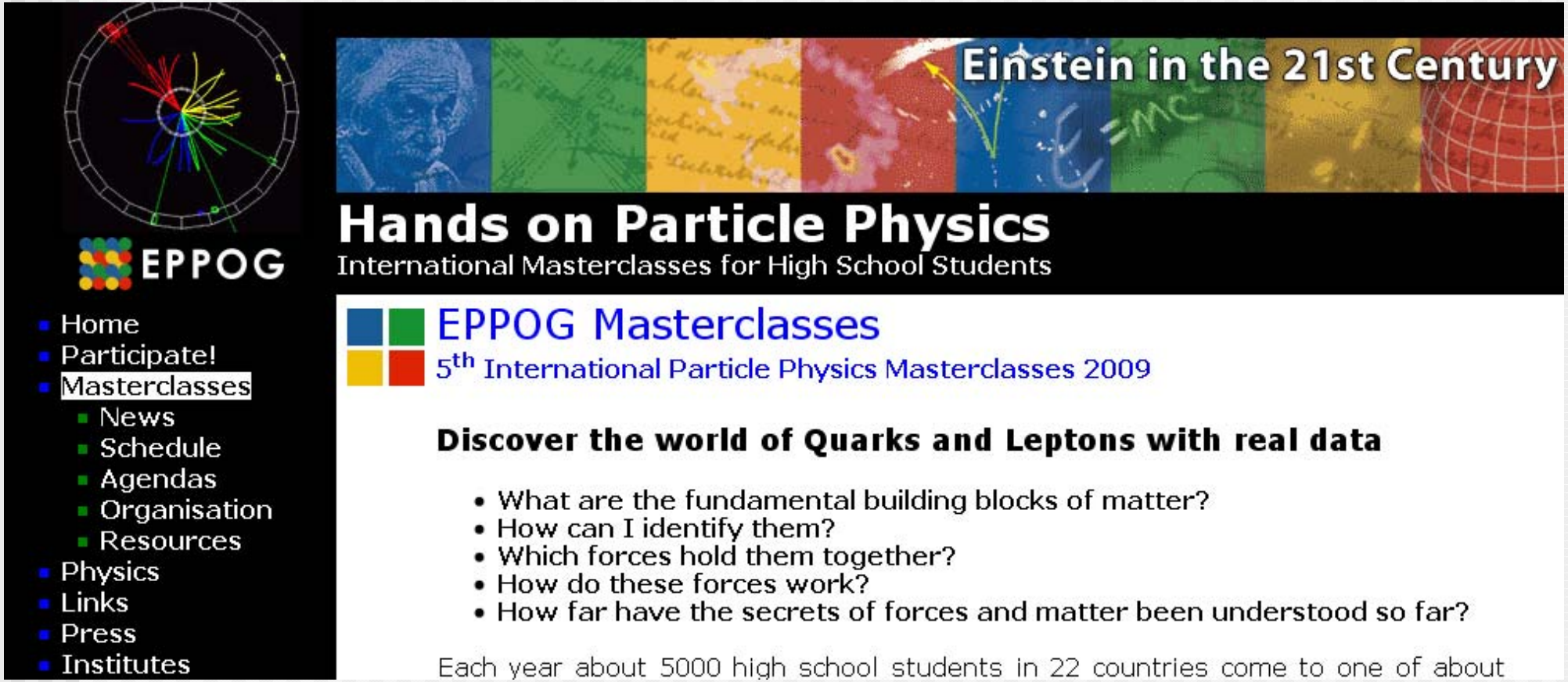


- Electron-microscopy of materials: crystals, CD-surfaces etc…



8. - 12.6.2010: typically 20 students

Participation in EPPOG Masterclasses



- 2010: some 25 students
- 2011: some ~40 students