IPPOG – EXPERTS IN BRINGING NEW DISCOVERIES TO THE PUBLIC

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International Particle Physics Outreach Group

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International Particle Physics Outreach Group

- IPPOG = unique mix of people (http://ippog.web.cern.ch)
  - scientists, formal and informal science educators and explainers
  - from > 20 countries and prominent labs engaged in particle physics.
  - links to several national level science networks

- Flagship project: international masterclasses
  (www.physicsmasterclasses.org)
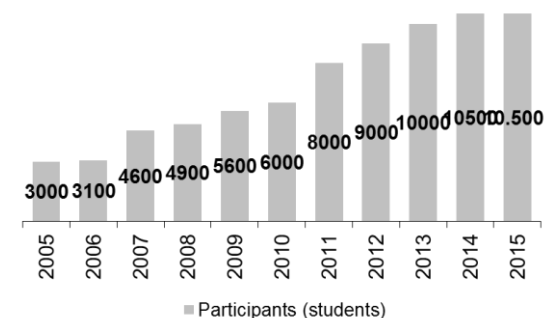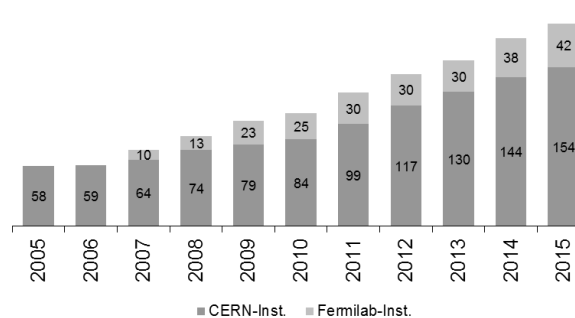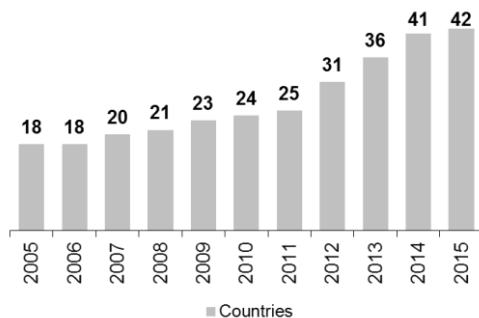
- Fostering other authentic international formats
  e.g. international cosmic day (http://icd.desy.de)

Open Science = Authentic Science

❖ Make public into scientists for a day

- Active „hands-on" involvement
  - o hear = forget, see = remember, do = understand
  - o boil down to essentials for enabling own measurements
- As close as possible to current research
  - o follow up what scientists have recently done

❖ Get insight into research process

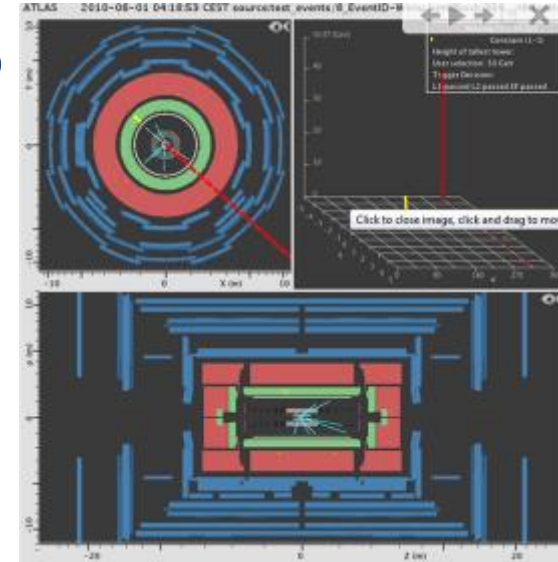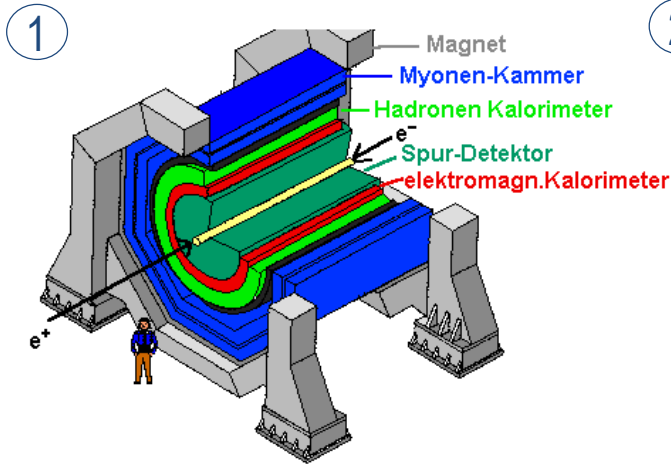- use original methods and tools
- compare the results to theories

❖ Authentic experience

- Analyse real scientific data
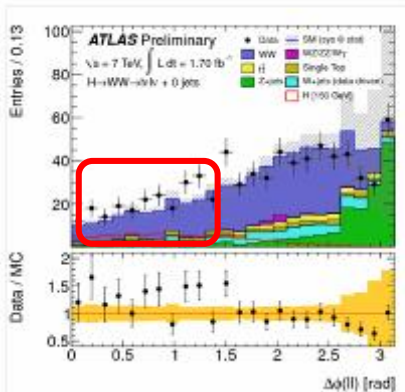- Meet and discuss with active scientists

INTERNATIONAL **MASTERCLASSES**
hands on particle physics

Example: ATLAS W path

http://atlas.physicsmasterclasses.org/en/wpath.htm

Higgs signal accumulates at small angles
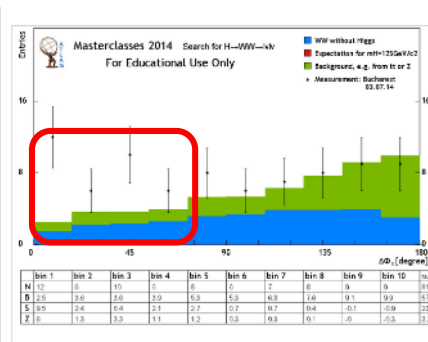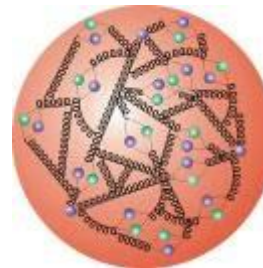
decay of W bosons → structure ot the proton

1-day formats need sustainable support

- resource collections (all target groups)
  - IPPOG database (https://ippog.web.cern.ch/resources)
  - CERN Open Data Portal (www.OpenData.cern.ch)
  - DESY Cosmic Muon web Interface (online autumn 2015)

- scientists + teacher/student networks
  - US QuarkNet
    - teachers join the research community at 52 centers nationwide
  - German Netzwerk Teilchenwelt www.teilchenwelt.de
    - 4 levels from masterclasses to research
    - Basic level: 24 institutes send Ph.D. students to schools (> 100 / year)
  - Interactions in Understanding the Universe I2U2 (FNAL et al.)
    - CMS e-lab: www.i2u2.org/elab/cms
    - student-led, teacher-guided online project in the class-room

- material tailored for school and university
  - Teilchenwelt material www.teilchenwelt.de/material + more to come
    - LEIFI web site www.leifiphysik.de/themenbereiche/teilchenphysik
  - Lab courses for university education

DISCUSSION