

How to bring Particle Physics Masterclass to Developing Country

WG#11

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Team Member:

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Subject range of teachers : general science, physics & cosmology, physics and math, physics, sciences

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The existing problems:

- no access to books and resources
- no access to local scientists or physicists to interact with students
- no support from school, community, fellow local science teachers
- lack of skilled, competent teachers, and passionate/interested teachers
- too many students (upto 100 in a classroom)
- no computers, or technicians to maintain if acquired
- outdated syllabi
- not enough textbooks for students (eg. 20 to be shared among 100 students)
- no electricity/internet

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The existing problems:

- students have to commute long-distances, may have irregular attendance
- not enough emphasis on fundamental science vs math
- no labs. If labs exist, rudimentary tools to conduct simple experiments
- families only want students to take the exam and pass, not to really learn
- students don't see a future in science, no access to opportunities
- language problem since most resources are in English
- developing resources to allow insights into fundamental science for other disciplines

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What teachers would like students to take away :

- a sense of wonder and curiosity about the world
- to think independently for themselves, to want to understand deeply, to learn the basic concepts of science
- to have more practical, hands-on experience

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RESOURCES :

<http://home.web.cern.ch/students-educators>

<http://ippog.web.cern.ch/>

<http://education.web.cern.ch/education/>

<http://www.cernland.net/>

<http://www.particleadventure.org/>

<http://www.teilchenwelt.de/>

<http://ed.ted.com/>

<https://cds.cern.ch/?ln=en>

<http://quarknet.fnal.gov/>

<http://atlas-minerva.web.cern.ch/atlas-minerva/>

<http://hypatia.phys.uoa.gr/>

<http://www.learningwithatlas.eu/>

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EXTRA :

Cascade competition <http://www.birmingham.ac.uk/schools/physics/outreach/activities/cascade-competitions.aspx>

Organize a TEDxCERN@yourschool <http://tedxcern.web.cern.ch/participate>

[Follow and maybe even encourage your students to participate in http://home.web.cern.ch/students-educators/spotlight/2013/competition-beam-line-schools](http://home.web.cern.ch/students-educators/spotlight/2013/competition-beam-line-schools)

Organize an
<http://atlas-live-virtual-visit.web.cern.ch/atlas-live-virtual-visit/>

Follow or participate in
<http://hangouts.web.cern.ch/>

Lead by : IPPOG Working Group – Masterclasses for Developing Countries -- members *Konrad Jende*, CERN Outreach and Education Group , and *Abha Eli* from ATLAS Education & Outreach Team