Press Release

Dresden, February 2016

**High-school students dive into Particle Physics**

*Worldwide program opens the window of cutting-edge physics to young investigators*

**During the coming weeks, high-school students around the world are invited to nearby research institutes and universities for a day-long programme to experience life at the forefront of basic research. These *International Masterclasses* give students the opportunity to become particle physicists for a day. During a Masterclass, participants work with data from experiments at CERN´s Large Hadron Collider, or LHC, under the supervision of physicists. The Masterclasses this year are organized for February 11 through March 23 and will attract students from 45 countries worldwide.**

Particle physics is one of the most important emerging fields in science. The discovery of the Higgs boson at the LHC in summer 2012 led to a huge media echo and large public interest. *International Masterclasses* meet this interest and offer high-school students the chance to explore this field of cutting-edge physics by working with recent, authentic data from experiments at the LHC. The basic idea of the annual program is to let students work as much as possible like real scientists. “Students get a taste of how modern physics research works by working directly with particle physicists and using real LHC data,” says Michael Kobel, physics professor from Technical University Dresden and head of the program.

Four experiments - ATLAS, CMS, ALICE, and LHCb - have made data available for educational use within the program. Students examine the products of collisions between elementary particles that travel through the 27-kilometre accelerator at close to the speed of light. A wide range of study tasks is available. For example, students can rediscover the Z boson or the structure of the proton, reconstruct “strange particles” or measure the lifetime of the D0 particle. One of the highlights is the hunt for Higgs bosons. ATLAS and CMS have made available real Higgs candidate events for students to track this rare, elusive, and very short-lived particle. “During the day students understand how a scientific discovery can be claimed,” Kobel points out.

Scientists at about 210 universities and laboratories in 45 countries worldwide host *International Masterclasses* at their home institutions. New participants in the program come from Argentina, India, Peru, Slovenia, and Venezuela. The worldwide participation reflects the international collaboration in particle physics. To simulate a real scientific working environment, each Masterclass ends with a video conference, where student groups from different countries connect with two moderators at CERN or Fermilab (Batavia, Illinois, U.S.) to combine and discuss their results. They can also pick their moderators’ brains in a Q&A section. Most video conferences end with a multiple choice quiz on particle physics. More than 60 physicists have volunteered to moderate the video conferences at CERN or Fermilab.

The [University of XY] is participating in the program on [March XX]. The [Physics Institute] has invited [50] students from the area. [N.N.], a particle physicist working on [LHC or other] at [Physics Institute] is looking forward to the event: [quote like: “The students love the program. They are excited to work with real data from the LHC and to talk to physicists at CERN.” or equivalent by N.N.]

*International Masterclasses* are led by Technical University Dresden and QuarkNet, in close cooperation with the International Particle Physics Outreach Group (IPPOG). IPPOG is an independent group of outreach representatives from countries involved in the research at CERN and other leading research laboratories. The group’s goal is to make particle physics more accessible to the public.

**For further information:**

**International Masterclasses**: [www.physicsmasterclasses.org](http://www.physicsmasterclasses.org)

**Schedule** (videoconferences with CERN): [www.physicsmasterclasses.org/index.php?cat=schedule](http://www.physicsmasterclasses.org/index.php?cat=schedule)

**Schedule** (videoconferences with Fermilab):

<https://quarknet.i2u2.org/page/videoconferences-2016>

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