Physics Slam
Cutting-edge physics in 3 minutes!
27 July, 19:30-21:00, Room: Audimax

Simon Vercaemer
Neutron identification in the SoLiD experiment
The SoLiD experiment aims to make a short baseline neutron oscillation measurement at the BR2 reactor in Belgium. Neutrons are detected via inverse beta decay (IBD) on a proton, yielding a positron and a neutron. Crucial for IBD reconstruction is a highly efficient neutron id

Alexandra Oliveira
Study of HH production at CMS
The production of pairs of Higgs bosons provides a direct handle on the structure of the Higgs field potential. While HH production within the SM is very small, several beyond-SM theories foresee an enhancement that can be already probed with the available data

Erica Brondolin
CMS tracking challenges yesterday, today and tomorrow
I will give an overview of the iterative track reconstruction used in CMS, one of the two general-purpose experiments at the LHC, with the performance obtained yesterday (Run1), recent tracking improvements for today (Run2), and some ideas (and foreseen results) for tomorrow (Phase2)

Valerio Vagelli
Measurement of the cosmic ray e+/e- flux with the AMS experiment on the International Space Station
Our planet is continuously bombarded by subatomic particles, like protons and electrons, coming from outer space: the “cosmic rays”. Why are cosmic rays so many? Where do they originate? To answer these questions, and more, physicists launched the AMS experiment into space to study cosmic rays and the origin of the Universe.

Valerio Rossetti
Performance of the ATLAS calorimeters and commissioning for LHC Run 2
The ATLAS experiment at the LHC is equipped with electromagnetic and hadronic liquid-argon (LAr) calorimeters and a hadronic scintillator-steel sampling calorimeter (TileCal) for measuring energy and direction of final state particles. We review the main commissioning and performance results of data-taking from 2009 until now

Andrew Wharton
What’s the matter with antimatter?
At the time of the big bang, the universe contained almost equal amounts of matter and antimatter, however by about three minutes later almost all the antimatter had disappeared! In this talk I’ll explain one way we might try to unravel this mystery: by understanding the breaking of the charge-parity symmetry in weak interactions

Hideyuki Oide
Improvements to ATLAS track reconstruction for Run 2
In this talk, improvements of ATLAS Inner Detector track reconstruction for the LHC Run2, and the early results using commissioning and the collision data will be shortly reviewed and discussed.

Valerio Vagelli
Status of the Hyper-Kamiokande Project
Hyper-Kamiokande is a future experiment in Japan which will use almost one MegaTon of water under 1 km of rock to see the most elusive particles in the universe, neutrinos, and in turn discover the secrets of the asymmetry between matter and antimatter in the universe

Linda Cremonesi
The answer is 42!
Several experiments are searching for the answers of fundamental questions and nature of laws of physics today. I will explain the important of exploiting the complementarily between different fields

Manfred Valentan
The Belle II Pixel Detector in its high radiation environment
The Pixel Detector of the Belle II experiment has to operate in a hostile environment with high radiation levels. I will show you a few tricks how we make sure that our sensors deliver meaningful measurements nonetheless

Badder Marzocchi
Precision electromagnetic calorimetry at the energy frontier: The CMS ECAL at the LHC Run 2
The LHC Run 2 has recently begun, at energy of 13 TeV. After the successful Higgs boson discovery via di-photon decays, the CMS electromagnetic calorimeter is at the forefront of the search for new physics and precision measurements. Its excellent performance relies on precision calibration maintained over time, despite severe irradiation conditions

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Suchita Kulkarni
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Alex Birnkraut
b-flavour tagging in pp collisions (LHCb)
Measurements of flavour oscillations and time-dependent CP asymmetries in neutral B meson systems require knowledge of the b quark flavour at production. This identification is performed by the Flavour Tagging