Blois 2018: 30th Rencontres de Blois on "Particle Physics and Cosmology"

Sunday 03 June 2018 - Friday 08 June 2018

Book of Abstracts

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QCD Tests with Jets, Bosons and Top Quarks at the LHC

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Search for Primordial Black Holes with VERITAS

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Beyond the Standard Model / Dark Matter / 193

Directional Search for Dark Matter Using Nuclear Emulsion

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A variety of experiments have been developed over the past decades, aiming at the detection of Weakly Interactive Massive Particles (WIMPs) via their scattering in an instrumented medium. The sensitivity of these experiments has improved with a tremendous speed, thanks to a constant development of detectors and analysis methods. Detectors capable of reconstructing the direction of the nuclear recoil induced by the WIMP scattering are opening a new frontier to possibly extend Dark Matter searches beyond the neutrino background. Exploiting directionality would also give a proof of the galactic origin of dark matter making it possible to have a clear and unambiguous signal to background separation. The NEWSdm experiment, based on nuclear emulsions, is a new experiment proposal intended to measure the direction of WIMP-induced nuclear recoils with a solid-state detector, thus with a high sensitivity. We discuss the discovery potential of a directional experiment based on the use of a solid target made of newly developed nuclear emulsions and novel read-out systems achieving nanometric resolution. We also report results of a technical test conducted in Gran Sasso.

Subject:

BSM+DM

Abstract Title:

Directional Search for Dark Matter Using Nuclear Emulsion

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Parallel Session Neutrinos / 194

First result on the neutrinoless double beta decay of Se-82 with CUPID-0

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CUPID-0 is the first large array of enriched scintillating ZnSe cryogenic calorimeters implementing active particle identification. The detector consists of an array of 24 ZnSe crystals enriched in ^{82}Se and two natural ZnSe crystals for a total mass of 10.5 kg installed in a dilution refrigerator hosted at the Laboratori Nazionali del Gran Sasso.
The heat-light readout exploited in CUPID-0 provides a unique tool for α-particle discrimination and allows to suppress the background in the region of interest to an unprecedented level for a bolometric experiment. We will report the first results of the search for neutrinoless double beta decay ($0\nu\beta\beta$) in ^{82}Se and a preliminary background reconstruction.

Subject:

Neutrinos

Abstract Title:

First result on the neutrinoless double beta decay of Se-82 with CUPID-0

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Parallel Session Neutrinos / 195

The ENUBET neutrino beam

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ENUBET has been designed to monitor lepton production in the decay tunnel of neutrino beams at single particle level and to provide a 1% measurement of the neutrino flux at source. In particular, the three body semileptonic decay of kaons monitored by large angle positron production offers a fully controlled ν_e source at the GeV scale for a new generation of short baseline experiments. During the last year major advances have been achieved in the design of the positron tagger and the beamline. In Blois, the ENUBET Collaboration will present the performance of the positron tagger tested at CERN in 2017-2018, the design for the Reference Beamline - with special emphasis on the static focusing system - and the expected sensitivity of ENUBET for ν_e and ν_μ cross section measurements.

Subject:

Neutrinos

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The ENUBET neutrino beam

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Parallel Session Astro+Cosmo / 196

Gamma Rays from the Centers of the Milky Way and Andromeda Seen with the Fermi-LAT

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Results from the CUORE experiment

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The Cryogenic Underground Observatory for Rare Events (CUORE) is the first bolometric experiment searching for neutrinoless double beta decay ($0\nu\beta\beta$) that has been able to reach the one-ton scale. The detector consists of an array of 988 TeO_2 crystals arranged in a compact cylindrical structure of 19 towers. The construction of the experiment was completed in August 2016 with the installation of all towers in the cryostat. Following a cooldown, diagnostic, and optimization campaign, routine data-taking began in spring 2017. In this talk, we present the $0\nu\beta\beta$ results of CUORE from examining a total TeO_2 exposure of 86.3 kg·yr, characterized by an average energy resolution of 7.7 keV FWHM and a background in the region of interest of \mbox{0.014 counts/(keV·kg·yr)}. In this physics run, CUORE placed a lower limit on the ^{130}Te $0\nu\beta\beta$ half-life of $T^{0\nu}_{1/2} > 1.3 \times 10^{25}$ yr (90% C.L.). We then discuss the additional improvements in the detector performance achieved in 2018 and the latest update on the study of other rare processes in Tellurium and the evaluation of the background budget.

Subject:

Neutrinos

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Results from the CUORE experiment

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Parallel Session QCD+HF / 200

EMC-effect in Drell-Yan process

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The EMC effect or a modification of parton distributions in bound nucleons by nuclear enviroment as compared to free ones, has been extensively studied during the last 30 years. Many explanations of the effect like nuclear binding, pion excess in nuclei, multi-quark clusters, dynamic rescaling, medium modification, short-range correlations, etc. have been proposed, but its full understanding is still lacking. The COMPASS experiment at CERN will provide new results on the EMC effect, originating from the Drell-Yan process and studied in the 190 GeV π^- beam scattering on the ammonia

and tungsten targets.
The present understanding of the EMC effect and experimental possibilities of COMPASS in this context will be discussed.

Subject:

QCD+Flavour

Abstract Title:

EMC-effect in Drell-Yan process

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Parallel Session Neutrinos / 201

Search for neutrinoless double beta decay with GERDA

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The GERmanium Detector Array (GERDA) collaboration searches for the hypothetical lepton number violating process neutrinoless double beta decay of Germanium-76 by operating 35 kg of enriched germanium diodes acting as both source and detector. The detectors are operated directly in liquid argon, which acts both as a coolant and as background shielding. Since the start of Phase II in 2015, the liquid argon is also instrumented with light detectors to readout scintillation light for further background suppression. The most recent limit on the half-life from GERDA is 8.0×10^{25} yr, the strongest limit set for this isotope. This was achieved with a background level of 10^{-3} counts/(keV kg yr), such that GERDA will remain "background-free" up to the entire design exposure. In May 2018, GERDA's projected half-life sensitivity will surpass 10^{26} yr, the first neutrinoless double beta decay experiment to do so. Results and analysis from this data release will be presented.

Subject:

Neutrinos

Abstract Title:

Search for neutrinoless double beta decay with GERDA

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Parallel Session Astro+Cosmo / 202

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Parallel Session Astro+Cosmo / 203

The BAHAMAS Project

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Parallel Session QCD+HF / 204

Search for K+_to pi+ nu nu at NA62

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Abstract Title:

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Parallel Session BSM+DM / 205

Search for exotics at NA62

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Fixed target experiments are a particularly useful tool in the search of very weakly coupled particles in the MeV-GeV range,
which are of interest, e.g. as potential Dark Matter mediators. Owing to the high beam-energy and

a hermetic detector coverage, NA62 also has the opportunity to directly search for a variety of long-lived beyond-the Standard Model particles, such as Axion-like Particles and Dark Photons. In this talk, we will review the status of this searches and give prospects for future data taking at NA62. Searches for heavy neutral lepton (HNL) production in charged kaon decays using the data collected by the NA62 experiment at CERN are reported. Upper limits are established on the elements of the extended neutrino mixing matrix for heavy neutral lepton mass in the range 130-450 MeV, improving on the results from previous HNL production searches. The status and prospects of searches for lepton flavour and lepton number violation in kaon decays at the NA62 experiment is also presented.

Subject:

BSM+DM

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Search for exotics at NA62

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Parallel Session Neutrinos / 206

KM3NeT/ORCA: Neutrino oscillation studies in the deep sea

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ORCA is the low-energy branch of KM3NeT, the next-generation Cherenkov neutrino observatory under construction in the Mediterranean Sea. A dense configuration of optical modules is foreseen to detect neutrinos down to a few GeV energy. The detector will be able to accurately reconstruct and distinguish two event topologies: track-like signatures from mostly ν_μ charged current interactions and cascade events dominated by the remaining neutrino interactions. With its instrumented volume of 8 Mm^3, ORCA will collect high statistics of atmospheric neutrinos that have traversed a wide range of baselines and matter density profiles while crossing the Earth.

These ingredients enable ORCA to resolve the neutrino mass hierarchy, i.e. determine whether the third neutrino mass eigenstate is lighter or heavier than the other two, with a significance of 3σ after 3-4 years of operation. ORCA will also be able to constrain other neutrino oscillation parameters such as θ_{23} and - by studying the appearance of tau neutrinos - the unitarity of 3-neutrino mixing.

The contribution reviews the technology, performance and main scientific objectives of the experiment. The current construction status and further science options including a possible neutrino beam to ORCA are outlined.

Subject:

Neutrinos

Abstract Title:

KM3NeT/ORCA: Neutrino oscillation studies in the deep sea

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Parallel Session Astro+Cosmo / 208

BICEP/Keck: Constraining primordial gravitational waves with CMB polarization observations from the South Pole

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Parallel Session BSM+DM / 209

Latest astroparticle physics results of H.E.S.S.

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Parallel Session Astro+Cosmo / 210

Gamma Rays from the Centers of the Milky Way and Andromeda Seen with the Fermi-LAT

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Recent observations of gamma rays with the Fermi-LAT have revealed excess emission from the centers of the Milky Way and the Andromeda galaxy, both of unknown origin. In this talk, I will briefly review the current observational status of the excess including morphological and spectral properties. Possible interpretations will be discussed, such as cosmic ray interactions with the interstellar medium, unresolved population of point sources, and dark matter annihilation or decay. Future observations at higher energies may shed light on the origin of the central emission.

Subject:

Astro/Cosmo

Abstract Title:

Gamma Rays from the Centers of the Milky Way and Andromeda Seen with the Fermi-LAT

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Parallel Session Astro+Cosmo / 211

Neutrino astronomy in the Mediterranean: ANTARES latest results and perspectives for KM3NeT/ARCA

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Parallel Session Higgs+Top+EW / 212

The Left-Right SU_L (2) x SU_R (2) Model of Electroweak Interaction

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The $SU_L(2) \bigotimes SU_R(2)$ gauge model of the unified theory
of the electromagnetic and weak interactions, which is free of
the auxiliary self-interaction scalar field, is developed.
Breaking the initial symmetry, the $SU_L(2) \bigotimes U_R(1)$
Lagrangian is derived. The obtained $SU_L(2) \bigotimes U_R(1)$
Lagrangian contains all of the terms, corresponding to free boson
and fermion fields as well as to interactions between them, which are in the classical Standard Model
of the electroweak interaction. All boson
fields, including the Higgs one, directly arise due to violation
the initial symmetry, and are generated by the initial gauge
fields. The obtained masses of the Higgs particle and of the gauge boson fields
are in agreement with the experimental data[1,2].

1.ATLAS Collaboration, Physics Letters B, v.716, 30 (2012).
2.Particle Data Group,C. Patrignani et al., Chin.Phys. C , v.4, 100001 (2016).

Subject:

EW+Top+Higgs

Abstract Title:

TThe Left-Right SU_L (2) x SU_R (2) Model of Electroweak Interaction

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Parallel Session Astro+Cosmo / 213

Recent Results from the South Pole Telescope and Status of SPT-3G

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Parallel Session Astro+Cosmo / 214

A search for primordial black hole evaporation events with the VERITAS experiment

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Primordial black holes (PBH) are predicted to form from overdense regions in the early universe. These black holes can lose mass through Hawking radiation. Those PBHs of initial mass of 10^{15} g would evaporate in the current epoch, producing a bright burst of gamma rays. Despite the lack of detection from many experiments, the observations of PBH evaporation events provide constraints on their rate-density, which has cosmological implications. We search for excess of gamma-ray burst events that could be associated with primordial black hole evaporations in the archival data of VERITAS, a ground-based Cherenkov telescope array. We present new analysis techniques and search methodologies, and the new constraints on the rate-density of evaporation of primordial black holes.

Subject:

Astro/Cosmo

Abstract Title:

A search for primordial black hole evaporation events with the VERITAS experiment

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CHIME

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I will introduce the Canadian Hydrogen Intensity Mapping Experiment (CHIME), an ambitious project to study Dark Energy by tracing out 4 billion years of cosmic history, using a purpose-built radio telescope at Canada's Dominion Radio Astrophysical Observatory (DRAO).

Hydrogen Intensity (HI) mapping uses redshifted 21cm emission from neutral hydrogen as a 3D tracer of Large Scale Structure (LSS) in the Universe. Imprinted in the LSS is a remnant of acoustic waves which propagated through the primordial plasma of the nascent cosmos. This "Baryon Acoustic Oscillation" (BAO) feature, which appears as a spatial correlation of LSS, can be used as a standard ruler to trace the expansion history of the Universe, thereby allowing us to constrain the Dark Energy equation of state.

CHIME is a transit interferometer with no moving parts, which uses a massive computing backend to image the radio sky from 400-800MHz, corresponding to 21cm radiation emanating from a redshift range of $0.8 < z < 2.5$. Earth rotation sweeps its field of view across the sky, resulting in complete daily coverage of the northern celestial hemisphere and an unprecedented survey sensitivity. I will discuss the motivation, design, and progress on CHIME and its reduced-scale Pathfinder, as well as a pair of extensions which will probe the high-cadence time-domain radio sky, monitoring radio pulsars and exploring a more recent mystery in radio astronomy, the possibly-cosmological Fast Radio Bursts.

Subject:

Astro/Cosmo

Abstract Title:

CHIME

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Beyond the Standard Model / Dark Matter / 216

The XENON1T Dark Matter Experiment

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The XENON1T experiment is the first tonne-scale double phase (liquid-gas) time projection chamber for direct search of dark matter, currently operational at the underground National Laboratory of

Gran Sasso in Italy. XENON1T utilizes about 2000 kg of liquid xenon as target mass for interactions of weakly interacting massive particles (WIMPs), candidate dark matter particles, with xenon nuclei. The XENON1T experiment demonstrated the lowest electronic recoil background at low energies ever achieved in dark matter experiments, at the level of $(1.9 \pm 0.3) \cdot 10^{-4}$ events per kg·day·keV$_{ee}$. The first scientific results, based on a short data taking run of 34.2 live-days, set one of the most stringent exclusion limits for the spin-independent WIMP-nucleon interaction, reaching the lowest cross section value ever probed at $7.7 \cdot 10^{-47}$ cm^2 for 35 GeV/c^2 WIMP mass. Since then, XENON1T kept acquiring data with a second scientific run ended in early February 2018, during which ˜250 days of data were collected. The dark matter search results from the combined analysis of the two scientific runs, for a total exposure of ˜1 tonne-year, will be released soon and will allow to probe a range of WIMP-nucleon cross sections never explored before.

Subject:

BSM+DM

Abstract Title:

The XENON1T Dark Matter Experiment

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Parallel Session Astro+Cosmo / 217

Recent results from ANITA

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Parallel Session Astro+Cosmo / 218

Pierre Auger Observatory: latest results and prospects

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Parallel Session BSM+DM / 219

Results from the ARIS experiment

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Noble liquid time projection chambers (TPCs) are the leading technology in direct dark matter detection. Among the different targets, Liquid Argon (LAr) plays an important role thanks to its exceptional capabilities to distinguish between nuclear recoils and electronic recoils. The sensitivity of LAr detectors can be enhanced by constraining the parameters of the liquid argon response to interacting particles, such as the quenching of nuclear recoils and the electron-ion recombination effect.
The ARIS (Argon Response to Ionization and Scintillation) experiment has been designed to characterize the LAr response to low energy neutrons and gamma scatters with and without an electric field. A 0.5 kg LAr TPC was exposed to a highly collimated and quasi mono-energetic neutron beam produced with the LICORNE source at the IPN of Orsay and allowed to perform a precise measurement of quenching and recombination effects in LAr in the energy range of interest for dark matter searches.

Subject:

BSM+DM

Abstract Title:

Results from the ARIS experiment

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Parallel Session Astro+Cosmo / 220

Pierre Auger Observatory: latest results and prospects

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The Pierre Auger Observatory is the largest site in the world dedicated to the study of Ultra High Energy Cosmic Rays. It has accumulated an unprecedented amount of data that allowed to shed light on the nature and origin of the highest energy known particles.
In this talk, the latest results will be briefly reviewed with a focus on the study of anisotropies in the arrival direction of UHECRs, its mass composition and constrains on high-energy hadronic interaction models. AugerPrime, the planned upgrade, will be also be presented.

Subject:

Astro/Cosmo

Abstract Title:

Pierre Auger Observatory: latest results and prospects

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Parallel Session Astro+Cosmo / 221

LATTES: a new detector concept for a gamma-ray experiment in the Southern hemisphere

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The Large Array Telescope for Tracking Energetic Sources (LATTES), is a novel concept for a hybrid EAS array detector, composed of a Resistive Plate Counter and a Water Cherenkov Detector, planned to cover gamma-rays from less than 100 GeV up to 100 TeVs. This experiment, to be installed at high altitude in South America, could cover the existing gap in sensitivity between satellite and ground arrays.

The low energy threshold, large duty cycle and wide field of view of LATTES makes it a powerful tool to detect transient phenomena and perform long term observations of variable sources. Moreover, given its characteristics, it would be fully complementary to the planned Cherenkov Telescope Array (CTA) as it would be able to issue alerts.

In this talk, a description of its main features and capabilities, as well as results on its expected performance, and sensitivity, will be presented.

Subject:

Astro/Cosmo

Abstract Title:

LATTES: a new detector concept for a gamma-ray experiment in the Southern hemisphere

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Parallel Session Astro+Cosmo / 222

CHIME

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Parallel Session Astro+Cosmo / 223

Point-source searches with IceCube

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Parallel Session Astro+Cosmo / 224

LATTES: a new detector concept for a gamma-ray experiment in the Southern hemisphere

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Parallel Session Higgs+Top+EW / 225

Higgs Boson fermionic production and decay modes with the ATLAS detector

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While the Higgs boson was discovered primarily through its coupling to other bosons, many of the Higgs couplings to fermions have yet to be conclusively observed at the LHC. Observing and measuring Higgs fermionic production and decay is crucial to understanding the Standard Model and anything that may lie beyond it. This presentation will summarize current efforts by the ATLAS collaboration to study these phenomena in the ATLAS detector at the LHC.

Subject:

EW+Top+Higgs

Abstract Title:

Higgs Boson fermionic production and decay modes with the ATLAS detector

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Parallel Session Astro+Cosmo / 226

Quantum gravity corrections to photon dynamics, white dwarfs and the Big Bang

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Planck scale acts as a threshold where a new description of spacetime is expected to appear. We consider the invariant Planck scale modified/deformed Poincare algebra proposed by Magueijo and Smolin and study the consequences as the Planck scale corrections to the known physics. We get Planck scale modified dispersion relation and an effective invariant ultraviolet energy cut-off (Planck energy). We study various equilibrium thermodynamic properties of blackbody radiation (i.e. a photon gas) and degenerate fermions with such modifications. The energy density, specific heat etc. of the photon gas follows the usual acoustic phonon dynamics as have been well studied by Debye. This is in sync with the expectation of the emergence of the granular structure of spacetime at Planck scale. Other modified thermodynamic quantities like pressure, entropy etc. also get the correction. The usual Stefan- Boltzmann law gets modified. The phase-space measure is also expected to get modified for an exotic spacetime appearing at Planck scale, which in turn leads to the modification of Planck energy density distribution and the Wien's displacement law. We found that the non-perturbative nature of the thermodynamic quantities in the SR limit (for both the case with ultravilolet cut-off and the modified measure case), due to nonanalyticity of the leading term, is a general feature of the theory accompanied with an ultraviolet energy cut-off. Due to such modifications, the energy momentum tensor Tμν gets modified and which leads to possible modification in case of the physics of Big Bang and the age of the known Universe. The dynamics of the compact Stellar objects as white dwarfs too gets modified.

Subject:

Astro/Cosmo

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Quantum gravity corrections to photon dynamics, white dwarfs and the Big Bang

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Parallel Session QCD+HF / 227

Heavy flavour results from Tevatron

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Parallel Session QCD+HF / 228

Highlights from heavy-flavor measurements with ALICE in heavy-ion collisions

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Parallel Session QCD+HF / 229

Heavy flavour production and properties in CMS and ATLAS

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Parallel Session QCD+HF / 230

Mixing and CP violation in beauty and charm at LHCb

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Parallel Session QCD+HF / 231

Rare decays, radiative decays and b->sll transitions at LHCb

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Lepton Flavour Universality tests with B decays at LHCb

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Parallel Session QCD+HF / 233

Test of lepton universality in rare B decays at BELLE

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Parallel Session QCD+HF / 234

Belle II status and early physics

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Parallel Session QCD+HF / 235

Searches for tau LFV and lepton non-universality at Belle II

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Parallel Session QCD+HF / 236

Soft QCD in ATLAS and CMS

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Parallel Session QCD+HF / 237

QCD highlights from ALICE

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Parallel Session QCD+HF / 238

QCD with photons in ATLAS and CMS

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Parallel Session QCD+HF / 239

Hadron spectroscopy, exotic states and heavy flavour production at LHCb

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Parallel Session QCD+HF / 240

Charmonium decays at BESIII

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Parallel Session QCD+HF / 241

Recent results on production and decay of quarkonium states at BABAR

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Parallel Session QCD+HF / 242

EMC-effect in Drell-Yan process at COMPASS

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Parallel Session QCD+HF / 243

Hard probes with pPb and PbPb collisions and fixed target results at LHCb

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Parallel Session QCD+HF / 244

Heavy ion measurements in ATLAS

Parallel Session QCD+HF / 245

Heavy ion measurements in CMS

Parallel Session BSM+DM / 246

Darkside latest results and future prospects

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Parallel Session BSM+DM / 247

Search for dark matter particles with CRESST-III

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Parallel Session BSM+DM / 248

The XENON1T Dark Matter Experiment

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Parallel Session BSM+DM / 249

Directional Search for Dark Matter Using Nuclear Emulsion - NEWSdm

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Parallel Session BSM+DM / 250

Results from the ARIS experiment

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Parallel Session BSM+DM / 251

IceCube

Parallel Session BSM+DM / 252

Dwarfs spheroidal galaxies searches - VERITAS

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Parallel Session BSM+DM / 253

Galactic and extragalactic searches for dark matter annihilation

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Parallel Session BSM+DM / 254

Composite Dark Matter

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Parallel Session BSM+DM / 255

Is self-interacting dark matter with no light mediators viable?

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Parallel Session BSM+DM / 256

Flip-flop DM

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Parallel Session BSM+DM / 257

Long-lived particle signatures at present and future colliders

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Parallel Session BSM+DM / 258

Clockwork without supersymmetry

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Parallel Session BSM+DM / 259

n-nbar oscillations and BSM physics

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Parallel Session BSM+DM / 260

Physics with top and search for exotic signatures in the forward direction at LHCb

Parallel Session BSM+DM / 261

Searches for dark matter and new physics in ATLAS and CMS

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Parallel Session BSM+DM / 262

Searches with boosted objects

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Parallel Session BSM+DM / 263

Searches for electroweak production of supersymmetric gauginos and sleptons at ATLAS

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Parallel Session BSM+DM / 264

Search for vector-like quarks in ATLAS

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Parallel Session BSM+DM / 265

Searches for long-lived particles in ATLAS

Parallel Session BSM+DM / 266

Searches for leptoquarks in CMS

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Parallel Session BSM+DM / 267

Searches for supersymmetry with gauge-mediated symmetry breaking at CMS

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Parallel Session Higgs+Top+EW / 268

Inclusive and differential W/Z measurements in ATLAS and CMS

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Parallel Session Higgs+Top+EW / 269

Precision electroweak measurements at the Tevatron

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Parallel Session Higgs+Top+EW / 270

Tests of the electroweak sector in ATLAS

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Parallel Session Higgs+Top+EW / 271

Theoretical uncertainties for the W-Boson Mass

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Parallel Session Higgs+Top+EW / 272

Multiboson production in ATLAS and CMS

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Parallel Session Higgs+Top+EW / 273

Electroweak boson production with jets in CMS

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Parallel Session Higgs+Top+EW / 274

Automation of NLO electroweak calculations

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Parallel Session Higgs+Top+EW / 275

VBF and VBS production in SM processes in ATLAS and CMS

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Parallel Session Higgs+Top+EW / 276

Theory status for hadronic top-quark pair production

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Parallel Session Higgs+Top+EW / 277

ttbar(+X) pair production in ATLAS and CMS

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Parallel Session Higgs+Top+EW / 278

Single top production in ATLAS and CMS

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Parallel Session Higgs+Top+EW / 279

Top quark properties in ATLAS and CMS

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Parallel Session Higgs+Top+EW / 280

Anomalous top quark couplings, FCNC, and EFT interpretations in CMS

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Parallel Session Higgs+Top+EW / 281

Top mass measurements in ATLAS and CMS

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B-hadron observables and top mass determination

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Parallel Session Higgs+Top+EW / 283

Higgs Boson fermionic production and decay modes in ATLAS detector

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Parallel Session Higgs+Top+EW / 284

Measurement of the Yukawa couplings of the Higgs boson in CMS

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Parallel Session Higgs+Top+EW / 285

Measurement of cross sections and couplings of the Higgs Boson in bosonic decay channels in ATLAS

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Parallel Session BSM+DM / 286

Constraining the Higgs self-couplings at electron-positron colliders

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Parallel Session Higgs+Top+EW / 287

Searches for extended scalar sectors in CMS

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Higgs pair production

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Observation of ttH production in CMS

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Searches for flavor-changing neutral currents in top quark events in ATLAS

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Parallel Session BSM+DM / 291

NEWS-G project : direct detection of sub-Gev dark matter particles

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Parallel Session Neutrinos / 292

NOvA results

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Parallel Session Astro+Cosmo / 293

Results from the CUORE experiment

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Parallel Session QCD+HF / 294

Recent probes of perturbative QCD calculations with jets in ATLAS and CMS

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Parallel Session Higgs+Top+EW / 295

Results on ttH production in ATLAS

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Parallel Session Astro+Cosmo / **296**

Results from the CUORE experiment

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Neutrino Physics / **297**

Neutrino Properties from Observations in Astroparticle Physics

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Cosmological Constraints from Dark Energy Survey

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