

AstroParticle Symposium 2023

Rapport sur les contributions

ID de Contribution: 1

Type: **Non spécifié**

Primordial Black Hole : How, Where and When?

A review and discussion sessions concerning PBHn from historical aspects to constraints

ID de Contribution: 2

Type: **Non spécifié**

Gravitational Neutrino Reheating

mercredi 25 octobre 2023 12:20 (20 minutes)

Orateur: Prof. MAITY, Debaprasad

Classification de Session: Conference day

ID de Contribution: 3

Type: **Non spécifié**

Primordial Black hole reheating and its possible signatures

mercredi 25 octobre 2023 10:20 (20 minutes)

Orateur: Dr HAQUE, Riajul

Classification de Session: Conference day

ID de Contribution: 4

Type: **Non spécifié**

How did I found them? An historical perspective

Orateur: Prof. CARR, Bernard

Classification de Session: Discussion

ID de Contribution: 5

Type: **Non spécifié**

Expérimental searches and prospect

Classification de Session: Discussion

ID de Contribution: 6

Type: **Non spécifié**

Discussion around simulations

lundi 23 octobre 2023 15:30 (1 heure)

Classification de Session: Discussion

ID de Contribution: 7

Type: **Non spécifié**

Fate of métastable vacua around primordial black holes

mercredi 25 octobre 2023 09:40 (20 minutes)

Orateur: Dr HEURTIER, Lucien

Classification de Session: Conference day

ID de Contribution: 8

Type: **Non spécifié**

Pulsar Timing Arrays

lundi 13 novembre 2023 15:00 (20 minutes)

Orateur: PETITEAU, Antoine (CEA/IRFU/DPhP)

Classification de Session: Discussion

ID de Contribution: 9

Type: **Non spécifié**

LIGO/Virgo/KAGRA

lundi 13 novembre 2023 14:00 (20 minutes)

Orateur: DAL CANTON, Tito

Classification de Session: Discussion

ID de Contribution: **10**

Type: **Non spécifié**

Discussion

lundi 13 novembre 2023 14:20 (40 minutes)

Classification de Session: Discussion

ID de Contribution: **11**

Type: **Non spécifié**

Discussion

lundi 13 novembre 2023 15:20 (40 minutes)

Classification de Session: Discussion

ID de Contribution: 12

Type: **Non spécifié**

An investigation into the absence of detected VHE emission from GRBs prior to 2018

mardi 14 novembre 2023 09:30 (20 minutes)

Orateur: ASHKAR, Halim (CNRS - Ecole Polytechnique - LLR)

Classification de Session: Conference day

ID de Contribution: 13

Type: **Non spécifié**

H.E.S.S. real-time follow-up on high-energy neutrino alerts from IceCube

mardi 14 novembre 2023 10:10 (20 minutes)

Orateur: BRADASCIO, Federica (CEA/IRFU)

Classification de Session: Conference day

ID de Contribution: 14

Type: **Non spécifié**

CTA Coordination on Real-Time and Multi-Messenger Astrophysics

mardi 14 novembre 2023 10:50 (20 minutes)

Orateur: BARRES DE ALMEIDA, Ulisses

Classification de Session: Conference day

ID de Contribution: 15

Type: **Non spécifié**

GW follow-ups with IACTs

mardi 14 novembre 2023 10:30 (20 minutes)

Orateur: SEGLAR ARROYO, Monica (CEA)

Classification de Session: Conference day

ID de Contribution: 16

Type: **Non spécifié**

Elusive Diffuse Gamma-Ray Emission in Galaxy Clusters: The Role of Cosmic-Ray Transport

mardi 14 novembre 2023 11:50 (20 minutes)

Orateur: REICHHERZER, Patrick (University of Oxford)

Classification de Session: Conference day

ID de Contribution: 17

Type: **Non spécifié**

Probing Gamma-Ray Burst at Very High Energy : Results from 15 Years of H.E.S.S. Observations

mardi 14 novembre 2023 09:50 (20 minutes)

Orateur: DE BONY DE LAVERGNE, Mathieu (IRFU, CEA, Université Paris-Sacla)

Classification de Session: Conference day

ID de Contribution: 18

Type: Non spécifié

Mind everywhere: the future of engineering

mardi 14 novembre 2023 15:00 (1 heure)

Imagine a world where each “thing” comes with AI built-in. Your phone video app, to assure that you enjoy uninterrupted service, intelligently buffers the video and requests a varying number of packets ahead, using predictive models about you, the video you are watching, and the world. The mobile base station allocates frequencies, roams phones, focuses beams intelligently to serve all phones in the cell and to minimize energy consumption. This system requires layered decision-making, persuasion more than direct control, continually learned and updated world models and policies that lead to local, individuated systems which will evolve during their lifetime and across generations. The system will be more similar to a living organism than to a machine. To design such systems, engineering will need to go through a paradigm shift, inspired by modern developmental biology, neuroscience, and cognitive science, themselves also recently going through paradigm shifts. I will sketch some of this latest developments, specifically Michael Levin’s Technological Approach to Mind Everywhere (TAME) proposal and Mark Solms’ Artificial Consciousness project, and how they inspire rethinking engineering.

Orateur: KEGL, Balazs**Classification de Session:** Colloquium

ID de Contribution: **19**

Type: **Non spécifié**

MSSM inflation revisited

mercredi 25 octobre 2023 10:00 (20 minutes)

Orateur: M. WEYMANN-DESPRES, gilles

Classification de Session: Conference day

ID de Contribution: **20**

Type: **Non spécifié**

Freeze in at stronger coupling

mercredi 25 octobre 2023 11:20 (20 minutes)

Orateur: Prof. LEBEDEV, Oleg

Classification de Session: Conference day

ID de Contribution: 21

Type: **Non spécifié**

New Insight on Neutrino Dark Matter Interactions from Small-Scale CMB Observations

mercredi 25 octobre 2023 14:40 (20 minutes)

Orateur: Dr TROJANOWSKI, Sebastian

Classification de Session: Conference day

ID de Contribution: 22

Type: **Non spécifié**

Strong Backreaction of Axion inflation

mercredi 25 octobre 2023 14:20 (20 minutes)

Orateur: Dr FIGUEROA, Daniel

Classification de Session: Conference day

ID de Contribution: 23

Type: **Non spécifié**

Inflationary and post-inflationary scalar dark matter production

mercredi 25 octobre 2023 10:40 (20 minutes)

Orateur: Prof. GARCIA, Marcos

Classification de Session: Conference day

ID de Contribution: 24

Type: **Non spécifié**

Gravitational Waves Shed Light on Particle Decay

mercredi 25 octobre 2023 12:00 (20 minutes)

Orateur: Dr KANETA, Kunio

Classification de Session: Conference day

ID de Contribution: 25

Type: **Non spécifié**

History of a hot hidden dark sector

mercredi 25 octobre 2023 16:40 (20 minutes)

Orateur: M. KIMUS, Jean

Classification de Session: Conference day

ID de Contribution: 26

Type: **Non spécifié**

Reheating after inflaton fragmentation

mercredi 25 octobre 2023 15:00 (20 minutes)

Orateur: Dr PIERRE, Mathias

Classification de Session: Conference day

ID de Contribution: 27

Type: **Non spécifié**

Minimal sterile neutrino dark matter

mercredi 25 octobre 2023 11:40 (20 minutes)

Orateur: Prof. BRINGMANN, Torsten

Classification de Session: Conference day

ID de Contribution: 28

Type: **Non spécifié**

Matter-antimatter asymmetry and dark matter stability from baryon number conservation

mercredi 25 octobre 2023 14:00 (20 minutes)

Orateur: Prof. IBARRA, Alejandro

Classification de Session: Conference day

ID de Contribution: **29**

Type: **Non spécifié**

Positivity bounds on Higgs-portal dark matter

mercredi 25 octobre 2023 15:40 (20 minutes)

Orateur: Prof. LEE, Hyun Min

Classification de Session: Conference day

ID de Contribution: 30

Type: **Non spécifié**

Freeze-in baryogenesis and early matter domination

mercredi 25 octobre 2023 16:00 (20 minutes)

Orateur: Prof. GOUDELIS, Andreas

Classification de Session: Conference day

ID de Contribution: 31

Type: **Non spécifié**

Higgs inflation at the pole

mercredi 25 octobre 2023 16:20 (20 minutes)

Orateur: Mlle GUERRERO MENKARA, Adriana

Classification de Session: Conference day

ID de Contribution: 32

Type: **Non spécifié**

SEMINAR: Gauss-Bonnet gravity and conformally coupled scalar fields in four-dimensions

lundi 6 novembre 2023 14:00 (1 heure)

Orateur: FERNANDES, Pedro

ID de Contribution: 33

Type: **Non spécifié**

DISCUSSION SESSION: Numerical Solutions and Scalarisation

mardi 7 novembre 2023 10:00 (2 heures)

Discussion led by Daniela Doneva

Orateur: DONEVA, Daniela (University of Tuebingen)

ID de Contribution: 34

Type: **Non spécifié**

COLLOQUIUM: Black holes beyond GR: from no-hair theorems to non-linear dynamics

mardi 7 novembre 2023 14:00 (1 heure)

Orateur: SOTIRIOU, Thomas (Nottingham University)

ID de Contribution: 35

Type: **Non spécifié**

PUBLIC LECTURE: Les trous noirs et la fin du temps en relativité générale (in french)

mercredi 8 novembre 2023 19:25 (1 heure)

Orateur: PEREZ, Alejandro (Université de Marseille)

ID de Contribution: 36

Type: **Non spécifié**

DISCUSSION SESSION: Black Hole Perturbations

mercredi 8 novembre 2023 10:00 (2 heures)

Discussion led by Hugo Roussille

Orateur: ROUSSILLE, Hugo (ENS de Lyon)

ID de Contribution: 37

Type: **Non spécifié**

SEMINAR: The ringdown of horizonless compact objects

mercredi 8 novembre 2023 16:00 (1 heure)

Orateur: MAGGIO, Elisa (Max Planck Institute for Gravitational Physics, Albert Einstein Institute, Potsdam)

ID de Contribution: 38

Type: **Non spécifié**

DISCUSSION SESSION: Spectral Instability of Black Holes

vendredi 10 novembre 2023 10:00 (2 heures)

Discussion led by Kyriakos Destounis

Orateur: DESTOUNIS, Kyriakos (University of Rome)

ID de Contribution: 39

Type: **Non spécifié**

SEMINAR: Perturbation Theory with Black Hole Quasi-Normal Modes

vendredi 10 novembre 2023 13:30 (1 heure)

Orateur: SBERNA, Laura (Max Planck Institute for Gravitational Physics (Albert Einstein Institute))

ID de Contribution: 40

Type: Non spécifié

Athanasios Bakopoulos (NTUA Athens) “Compact Objects in Scalar-Tensor theories”

jeudi 9 novembre 2023 10:00 (30 minutes)

We analyse in all generality beyond Horndeski theories of shift symmetry in a static and spherically symmetric spacetime. By introducing four auxiliary functions, we write the field equations in a particularly compact form. We show that assuming additionally parity symmetry renders the system directly integrable giving multiple families of black-hole solutions. These have typically an asymptotically-flat Reissner-Nordstrom behaviour, and emerge in the presence of a canonical kinetic term for the scalar field. In the absence of parity symmetry, we present a general method which allows us to integrate the field equations by choosing the form of only one coupling function and an auxiliary quantity. This method leads to asymptotically flat and AdS black hole solutions with differing properties. We finally discuss disformal transformations within this context as a means of obtaining wormhole and black hole solutions in different theories.

Philippe Grandclement (LUTH Meudon)

“Fully consistent rotating black holes in the cubic Galileon theory”

Previous attempts to construct numerically rotating black holes in the cubic Galileon theory were based on the use of quasi-circular coordinates. However it was noticed at that time that this choice was inconsistent with the properties of the theory thus leading to (small) violations of some components of Einstein’s equations. A formalism based on the maximal slicing condition and a spatial harmonic gauge enables to cure this problem and to obtain, for the first time, fully consistent rotating black hole solutions in this context. I will present the formalism that describes the black hole as an apparent horizon in equilibrium. The resulting system of equations is solved numerically using spectral methods. The properties of the obtained configurations will be discussed, in particular the violation of the zeroth-law of black hole thermodynamics.

ID de Contribution: 41

Type: **Non spécifié**

Jibril Ben Achour (ENS Lyon), "Exploring non-perturbative gravitational waves in Horndeski gravity"

jeudi 9 novembre 2023 11:30 (30 minutes)

ID de Contribution: 42

Type: **Non spécifié**

Diffuse gamma-ray and neutrino background from Galactic Ridge

mardi 14 novembre 2023 11:30 (20 minutes)

We show that the IceCube observation of the Galactic neutrino flux component confirms the hint of detection of neutrinos from the Galactic Ridge (the inner part of the Milky Way disk within the Galactic longitude $|l| < 30$ degrees), previously reported by the ANTARES collaboration. This confirmation indicates that the bulk of the high-energy flux from the Galactic Ridge in multi-TeV band is produced by interactions of high-energy protons and atomic nuclei, rather than electrons. We show that both ANTARES and IceCube measurements agree with the Fermi-LAT telescope measurements of the gamma-ray emission from the Ridge. The multi-messenger (neutrino plus gamma-ray) spectrum of the Ridge over a broad energy range from 10 GeV to 10 TeV is consistent with a model of pion decay emission produced by a power-law distribution of protons with a slope $\Gamma \sim 2.5$, harder than that of the locally observed cosmic ray spectrum. This provides for the first time an unambiguous multi-messenger demonstration of the variability of the spectrum of cosmic rays across the Galactic disk.

<https://arxiv.org/pdf/2307.07978.pdf>

Orateur: SEMIKOZ, Dmitri

Classification de Session: Conference day

ID de Contribution: 43

Type: **Non spécifié**

Colloquium: How to invalidate the standard (cold dark matter) model of cosmology

lundi 23 octobre 2023 14:00 (1 heure)

Classification de Session: Colloquium

ID de Contribution: 44

Type: **Non spécifié**

Colloquium: The BBN/CMB connection: Post Planck

mardi 24 octobre 2023 11:00 (1 heure)

Classification de Session: Colloquium

ID de Contribution: 45

Type: **Non spécifié**

Colloquium : Primordial Black Holes After 50 Years: A Positive Perspective

mardi 24 octobre 2023 14:00 (1 heure)

Classification de Session: Colloquium

ID de Contribution: 46

Type: **Non spécifié**

Discussion : Turning around PBH

mardi 24 octobre 2023 15:30 (1h 30m)

Classification de Session: Discussion

ID de Contribution: 47

Type: **Non spécifié**

Colloquium : Cosmology with future CMB experiments

jeudi 26 octobre 2023 14:00 (1 heure)

Classification de Session: Colloquium

ID de Contribution: 48

Type: **Non spécifié**

Colloquium: Multimessenger observations with gravitational waves from ground-based interferometers

jeudi 26 octobre 2023 15:15 (1 heure)

Classification de Session: Colloquium

ID de Contribution: 49

Type: **Non spécifié**

Discussion: Gravitino Dark Matter

vendredi 27 octobre 2023 11:00 (1h 30m)

Classification de Session: Discussion

ID de Contribution: 50

Type: **Non spécifié**

SEMINAR : The cosmological constant is probably still zero

mercredi 8 novembre 2023 14:00 (1 heure)

Orateur: Prof. PADILLA, Tony (Nottingham)

ID de Contribution: 51

Type: **Non spécifié**

GRB 221009A: the BOAT

mercredi 15 novembre 2023 10:00 (2 heures)

Orateurs: BURNS, Eric; WANG, Xiang-Yu

Classification de Session: Discussion

ID de Contribution: 52

Type: **Non spécifié**

SWGO

jeudi 16 novembre 2023 11:30 (30 minutes)

Orateur: BARRES DE ALMEIDA, Ulisses

Classification de Session: Discussion