

# A DECADE OF DISCOVERIES IN HIGH ENERGY PHYSICS

**MARCH 9<sup>th</sup> 2023**  
Brussels Town Hall, Grand Place


Fabio Maltoni - UCLouvain



# WELCOME by the organisers!

Nick van Remortel (UA)  
Barbara Clerbaux (ULB)  
Ioana Maris (ULB)  
Michel Tytgat (ULB)  
Steven Lowette (VUB)  
Jorgen D'Hondt (VUB)  
Didar Dobur (UG)  
Gwenhaël De Wasseige (UCLouvain)  
Fabio Maltoni (UCLouvain)





Today we celebrate a decade of amazing discoveries in the field of high energy physics: from the experimental confirmation of the Brout-Englert-Higgs mechanism at CERN, to the establishment of neutrino astronomy in the South Pole, to the discovery of gravitational waves.

These discoveries have opened a new era in the understanding our Universe, with many new challenges and a wealth of opportunities for the new generation.



We start this morning with three stories

- The H boson
- The Dark Universe
- The rise of the neutrinos

told by a few of the many early stage researchers that have grown within and significantly contributed to the success of the be.h EOS project (2018-2023).

## A (still growing) list of EOS ESRs:

Hesham El Faham (PhD-joint → PD)

Angela Taliercio (PhD → PD)

Khawla Jaffel (PhD)

Roberta Volpe (PD → PD)

Ken Mimasu (PD → PD → Tenure Track)

Andrew Cheek (PD → PD)

Rafael Aoude (PD → PD)

Iason Baldes (PD → PD)

Marco Hufnagel (PD → PD)

Eduardo Garcia-Valdecasas (PD → PD)

Tu Thong Tran (PhD-joint)

Marek Niedziela (PD → industry)

Thomas Kello (PhD-joint)

Simon Vercaemer (PD)

Yammer Abreu (PD → industry)

Andrey Popov (PD → PD)

Mostafa Mahdavihorrani (PhD)

Liam Wezembeek (PhD-joint)

Aqeel Ahmed (PD → PD)

Alexander Morton (PD → industry)

A.R. Sahasransu (PhD)

Jaydeep Datta (PD → PD)

Paola Mastrapasqua (PhD)

Simone Blasi (PD, now PD)

Dimitrios Kontos (PhD)

Soumya Dimitrios (PhD)

Agni Bethani (PD → PD → Tenure Track)

Christian Doering (PhD)

Joscha Knolle (PD)

Xunjie XU (PD)

Aritra Gupta (PD)

Gaetan Facchinetti (PhD)

## Working on a variety of topics:

- Exploration of novel ideas that address naturalness and their phenomenological implications
- H coupling determination and interpretation in the SMEFT
- Theoretical investigations and LHC searches for heavy scalars
- Neutrino puzzle via the LH portals
- Hidden Sectors through the H and kinematic portals
- Common experimental foundation on which searches with displaced objects

# Major events organised by be.h EOS

2018

10 Jan 2018 EOS be.h : Kick-off meeting in Louvain  
21 Jun 2018 be.HEP meeting in Ghent  
18 Oct 2018 EOS be.h : Welcome Event for the newcomers  
4-5 Dec 2018 Heavy Ions and Hidden Sectors Heavy Ions  
20 Dec 2018 EOS Solstice meeting in Bruxelles

2019

15-18 Apr 2019 Higgs and EFT – HEFT 2019  
21 Jun 2019 be.HEP meeting in Liège  
24-28 Jun 2019 FCC Week  
10-17 Jul 2019 EPS-HEP2019  
16-18 Oct 2019 IRN Terascale@Bruxelles  
12-14 Nov 2019 EOS PhD days (access restricted)  
27-29 Nov 2019 Searching for LLP at the LHC  
19 Dec 2019 EOS Solstice meeting in Bruxelles

2020

27 Apr 2020 be.h Symposium (postponed)  
22 Jun 2020 be.HEP meeting in Antwerpen (remote)  
27-29 Nov 2020 EOS PhD days (access restricted)  
16 Dec 2020 EOS Solstice meeting in Bruxelles

2021

09 Sept 2021 EOS Equinox meeting in Antwerpen  
22 Dec 2021 be.HEP meeting in UCLouvain

2022

21 Jun 2022 be.HEP meeting in Ghent  
5-8 Sept 2022 BLV 2022 in Bruxelles  
22 Dec 2022 EOS Solstice meeting in Bruxelles




We continue this afternoon with 4 plenary talks by renown personalities on

- Theoretical
- Accelerator
- Astroparticle
- Gravitational waves


physics. We will learn in an accessible way about the amazing discoveries in the last years and the on-going developments.





After a brief institutional session featuring our Universities and funding agencies, illustrating their vision of fundamental research in our field, we will be engaged in a discussion with a panel of exceptional scientific figures in our field.

This will give the unique opportunity for the young generation to discover the vision of world experts and pose questions about the challenges, the priorities of the field.



We will conclude with a visit of the Outreach Village, the first event of a series of outreach activities in HEP that will tour around Belgium for a year.





Let's get started and... enjoy!