Pushing the Boundaries of the Energy and Intensity Frontiers

Searching for New Physics at the HL-LHC and Beyond

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The race for the longest workshop title is on

Welcome and Thank-You

A warmest welcome to all participants — Thank you for joining us at this busy time of the year

Thank you for joining us at this busy time of the year And while the World Cup is on!



And thank you especially to the speakers –

We know we didn't give you a straightforward remit

A special thanks goes to IPPP –

For the hospitality and for generously funding this workshop through the 2017-18 Associateship programme

(https://www.ippp.dur.ac.uk/ippp-associateships)

Why This Workshop?

It feels like it is the right time to take stock of where we are in the search for BSM physics at colliders

And to check the route along the way

Making sure that we have the right navigation toolkit



We live in interesting times...

The LHC Run-2 is coming to an end

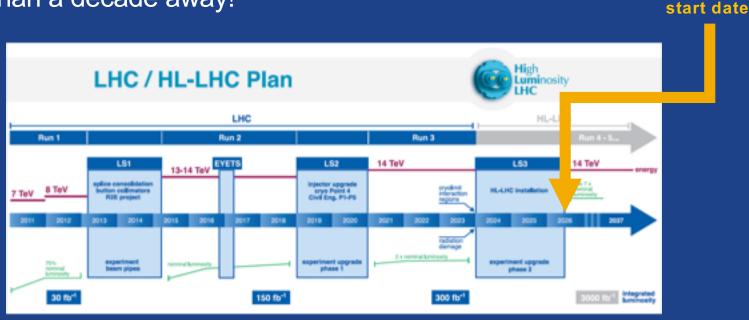
Some intriguing hints, but no signs of vanilla-type BSM physics

New physics may well be just around the corner, but easy to find it ain't

DUNE expected

The HL-LHC is firmly on the horizon

Less than a decade away!



Remember this?



Talks of a new collider do not seem that far-fetched anymore

"From 9 to 13 April, some **500 scientists from 147 institutes** met in Amsterdam for the 2018 Future Circular Collider (FCC) week. This **fourth** annual meeting of the **FCC collaboration** offered a vibrant space to discuss the latest research results and present technological breakthroughs that could pave the way for a new large-scale research infrastructure."

(Source: https://home.cern/cern-people/updates/2018/05/discussing-future-colliders-fcc-week-2018)

It matters to be talking about this now!

https://council.web.cern.ch/en/content/european-strategy-particle-physics-update-2018-2020

Aims and Format

In organizing this workshop, we have tried to steer away from the more traditional format with lots of detailed "review talks" – There is plenty of meetings of this kind and we didn't want to duplicate

Instead, we have chosen to have fewer but longer talks, leaving ample time for discussion

Speakers have been invited to present results and challenges giving a personal steer to their reflections and considerations

We want your insights!

Workshop Programme

Day 2

Standard Model
Overview

Flavour (including anomalies)

BSM (status and prospects)

Experimental challenges and techniques

Day 3

Modelling Uncertainties

PDFs

Day 1

Overview of Experimental and Theoretical Landscape

Workshop Programme

Day 2



Day 3



Day 1



We look forward to lots of fruitful discussions