

Welcome and Introduction

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UNIVERSITY OF
BIRMINGHAM

UK μ C P&D

This Workshop

Introduce the challenges and opportunities at a Muon Collider to the UK Physics and Detector community.

The μC accelerator technology is currently UK driven.

Let's expand to physics!

WP	Title	Coordinator	Institutes
1	Coordination and Communication	Roberto Losito (CERN)	CERN
2	Physics and Detectors Requirements	Donatella Lucchesi (UNIPD)	UNIPD, INFN, CEA, DESY, UOS, LIP, CERN
3	Proton Complex	Natalia Milas (ESS)	ESS, UU, CERN
4	Muon Production & Cooling	<u>Chris Rogers (STFC - UKRI)</u>	<u>UKRI, Imperial, UWAR, CERN</u>
5	High Energy Complex	Antoine Chancé (CEA)	CEA, INFN, CERN
6	RadioFrequency System	Claude Marchand (CEA)	CEA, ULA, UROS, INFN, CERN, <u>Strathclyde</u>
7	Magnet Systems	Luca Bottura (CERN)	CERN, CEA, INFN, SOTON, TUDa, UTWENTE
8	Cooling cell Integration	Lucio Rossi (CERN)	UMIL, INFN, <u>Imperial</u> , CERN

IMCC Annual Meeting 2023 (Orsey, France)

- 188 participants

IMCC and MuCol Annual Meeting 2024 (CERN)

- 192 participants

Interim MuCol report out soon

- 388 authors
- Major progress towards a CDR

- Formed as a result of *European Strategy for Particle Physics Update 2020* report
- Hosted by CERN
- Covers all necessary areas
 - Accelerator
 - Detector
 - Physics
- Main driver for the experimental work
- Some funding via **MuCol project**

Existing UK Effort (Accelerator)

- Huge UK involvement already.
- Mostly on the accelerator side.
- Increased participation for detector would be good synergy.



Innovate UK



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UK Effort (Detector)

- **Catch-up meetings: *first Monday of Month at 3pm***
 - UK Mailing List: UK-MUON-DETECTOR@JISCMAIL.AC.UK
 - Also attended by some of our accelerator friends.

Agenda

11:00	– 11:20	Introduction	🕒 20m	✎
11:20	– 11:50	The Muon Collider: International Perspective and Prospects Speaker: Daniel Schulte	🕒 30m	✎
11:50	– 12:20	Panel: How a Future Experiment Gets Built Speakers: Chris Rogers (STFC), Dave Newbold (STFC), Ken Long (Oxford Uni), Sinead Farrington (University of Edinburgh)	🕒 30m	✎
12:20	– 13:00	Accelerator R&D Speakers: Dr Paul-Bogdan Jurj (Imperial), Rebecca Taylor (CERN)	🕒 40m	✎
13:00	– 13:45	Lunch (sandwiches in Vinen Room – next door)	🕒 45m	
13:45	– 14:15	Detector Challenges Speaker: Prof. Alessandro Cerri (University of Sussex (GB))	🕒 30m	✎
14:15	– 14:35	Higgs Physics Speaker: Eugenia Celada (University of Birmingham)	🕒 20m	✎
14:35	– 14:55	BSM Physics Speaker: Karol Krizka (University of Birmingham)	🕒 20m	✎
14:55	– 15:15	Coffee Break	🕒 20m	
15:15	– 15:35	UK Detector R&D Program Speaker: Andrew Chisholm (University of Birmingham) PPAP Detector R&D...	🕒 20m	✎
15:35	– 15:55	Synergies Speaker: Stefania Ricciardi (STFC) Synergies-030724...	🕒 20m	✎

How to build it.

Detector challenges.

Why build it.

Who else benefits?

Early Career Researchers & Muon Colliders

Wed 28th August 2024 - Via Zoom

14:00-18:00 (CEST) & 08:00-12:00 (EST)

Open for the public



https://indico.cern.ch/e/muoncollider_ecr

Q&A with experts

Discussions on physics & the future

Design Overview of the Muon Collider

Call for External Speakers to present research

Open to:

- Undergraduates
- Masters
- PhDs
- Postdocs
- Students etc.

Interested in:

- Physics
- Engineering
- Computing
- Mathematics
- Communication etc.



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