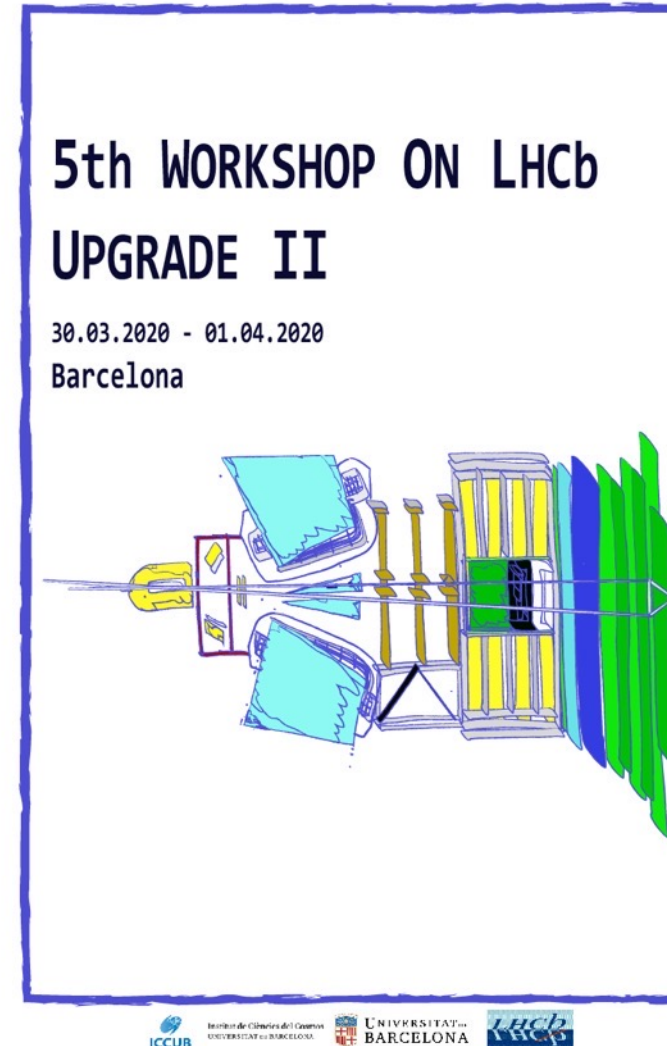


Upgrade II Workshop Introduction

Chris Parkes

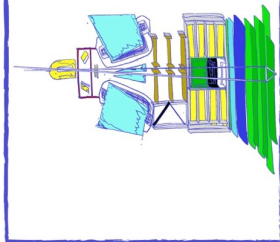
- Status
- Timescales
- Plans



Workshop Series

5th WORKSHOP ON LHCb UPGRADE II

30.03.2020 - 01.04.2020
Barcelona



Scientific Committee

Upgrade 2 Planning Group
Erik Thomas
Giovanni Passaleva
Chris Parkes
Eugeni Graugés Pous
Vincenzo Vagnoni
Matthew Needham

Local Organizing Committee

Eugeni Graugés Pous
Lluís Garrido Beltran
David Gascón Fora
Esther Pallarés (Scientific Office)
Marta Martín (Scientific Office)

Chris Parkes, March 2020

2

A quick game at the Nou Camp ?



Chris Parkes, March 2020

5

Workshop Series

5th WORKSHOP ON LHCb UPGRADE II

30.03.2020 - 01.04.2020
~~Barcelona~~ ~~Vidyo~~ Zoom

Local Organizing Committee

Eugeni Graugés Pous
Lluís Garrido Beltran
David Gascón Fora
Esther Pallarés (Scientific Office)
Marta Martín (Scientific Office)



Many Many thanks to Barcelona local organisers

They had done a huge amount of work before we had to move to video conf.

LHCb will go to Barcelona for an event at the next possible occasion !

Scientific

Upgrade 2 P
Erik Thoma
Giovanni Pa
Chris Parke
Eugeni Gra
Vincenzo Vagnoni
Matthew Needham

Many Many thanks to LHCb Secretariat: Nathalie, Cindy, Amelie

Chris Parkes, March 2020

Marta Martín (Scientific Office)

6

Tapas, BYO Cava ?



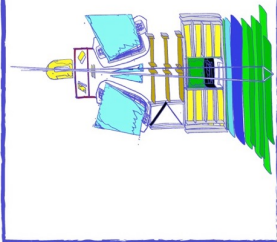
Chris Parkes, March 2020

6

Workshop Series

5th WORKSHOP ON LHCb UPGRADE II

30.03.2020 - 01.04.2020
Barcelona



3rd Workshop on LHCb Upgrade II



Scientific Committee

Upgrade 2 Planning Group

- Erik Thomas
- Giovanni Passaleva
- Chris Parkes

Local Organizing Committee

Eugeni Graugés

Guy Wilkinson

Eugeni Graugés

Scientific Committee

- Eugeni Graugés Pous
- Lluís Garrido Beltran
- David Gascón Fora
- Esther Pallarés (Scientific Office)
- Marta Martín (Scientific Office)

Scientific Committee

Upgrade 2 Planning Group

- Erik Thomas
- Giovanni Passaleva
- Chris Parkes
- Eugeni Graugés
- Vincenzo Vasile
- Matthew Needham

Many Many thanks to LHCb Secretariat: Nathalie, Cindy, Amelie

Chris Parkes, March 2020

Marta Martín (Scientific Office)

A quick game at the Nou Camp ?



?



Women's Champions League

Barcelona Women

- Fridolina Rolfo 11
- Maria Leon 33
- Fridolina Rolfo 45 +2:02
- Asiat Oshoala 46
- Patricia Guijarro 53



Roma Women

Annamaria Serturini 58



Barcelona Women win 6-1 on aggregate

LHCb will go to Barcelona for an event at the next possible occasion !

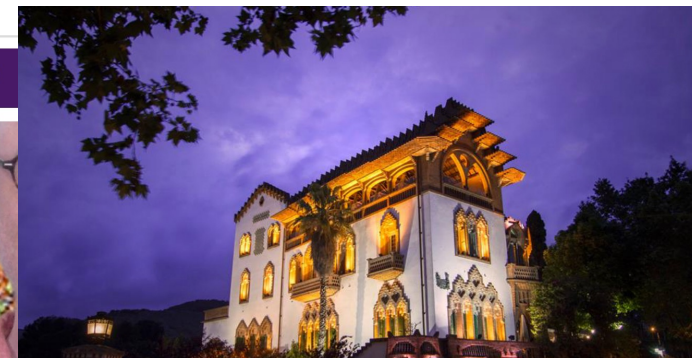
...age
...work before
we had to move to video conf.

LHCb will go to Barcelona for an event at the next possible occasion !

Tapas, BYO Cava ?



Chris Parkes, March 2020





- Current covid-19 crisis could be expected to impact on 2021 schedule

- LS3 modest changes

– Neither time nor finances would permit major upgrade for LS3 on current timescale

- Framework Technical Design Report

– Preparation for writing this is **main aim of this meeting**

Closing Remarks

31st March 2023

Chris Parkes & Matteo Palutan



Closing Remarks

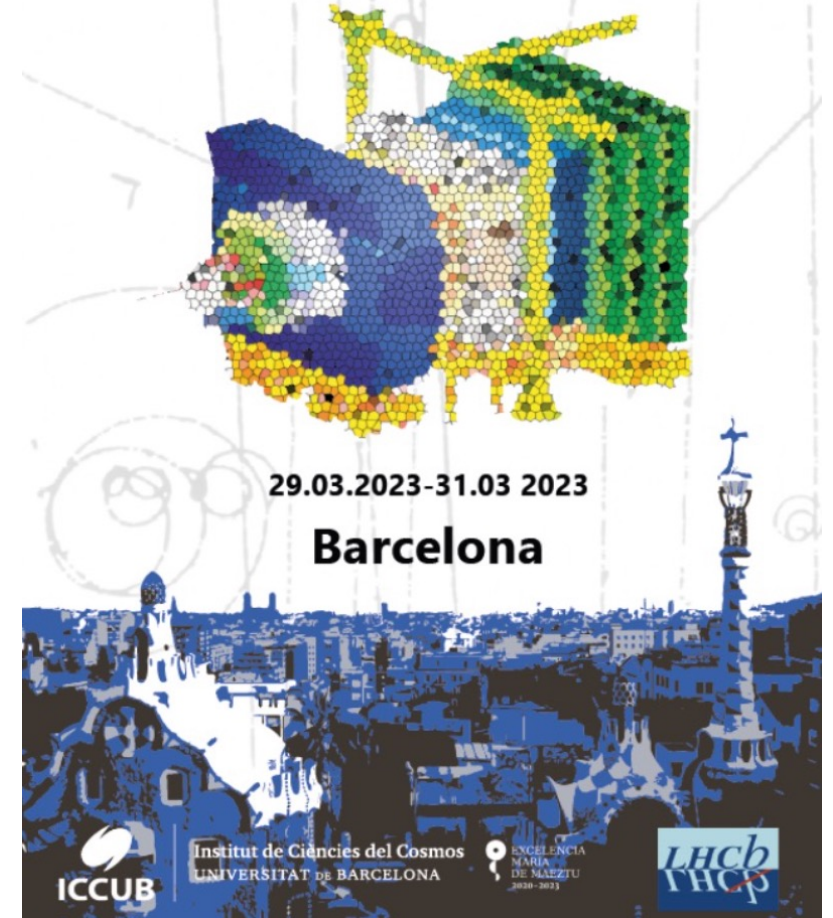
Physics vs. Detector

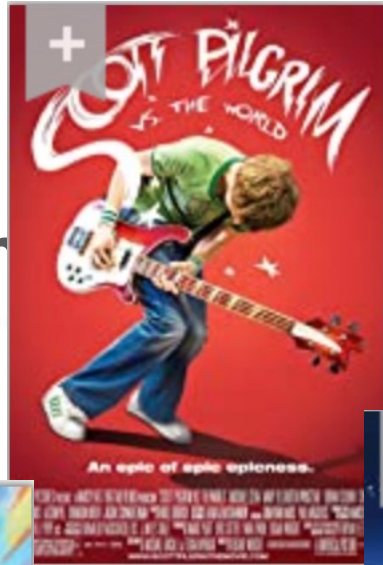
HLT
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31st March 2023

Chris Parkes & Matteo Palutan

6th Workshop on LHCb Upgrade II





Rem

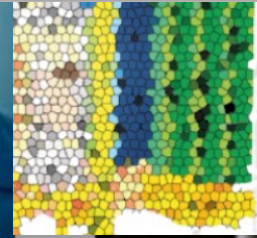
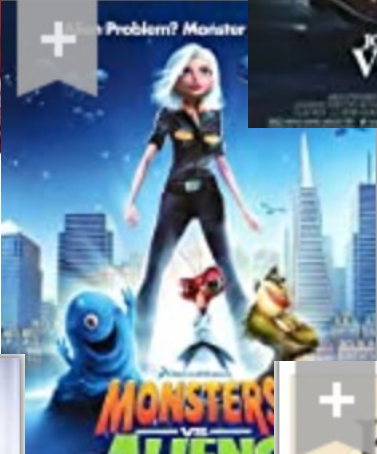
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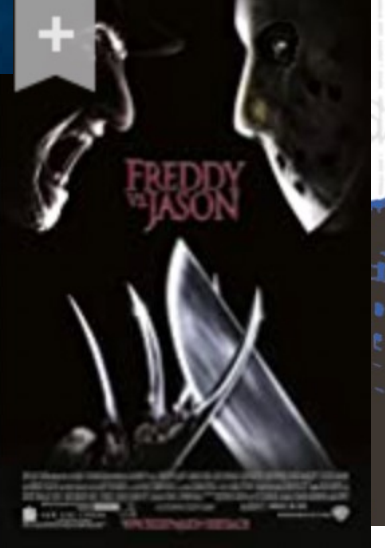
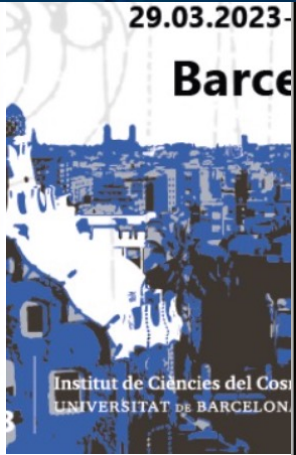
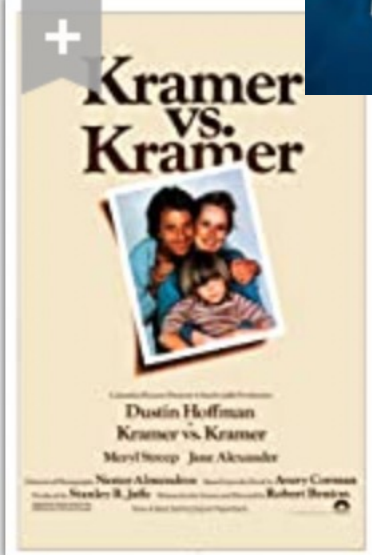
Physics

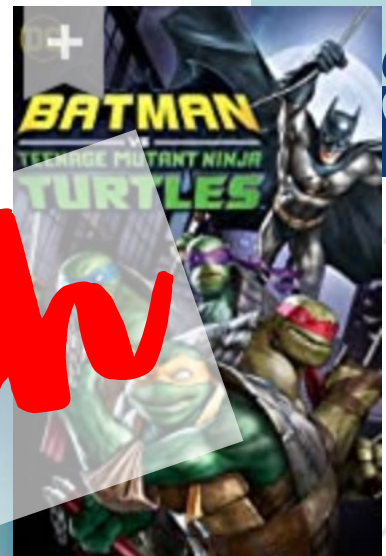
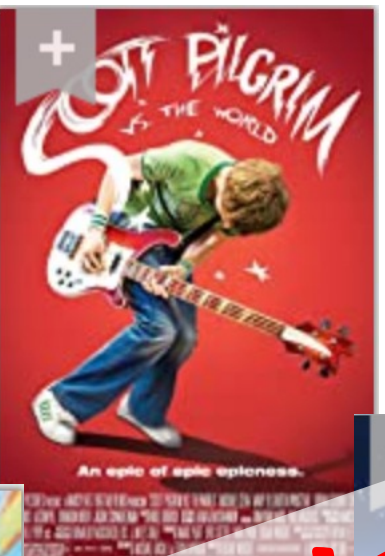


VS. ID



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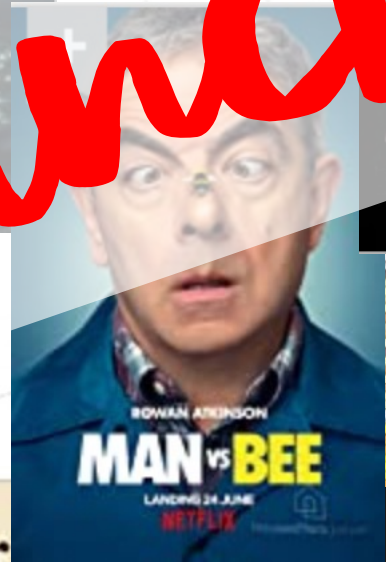
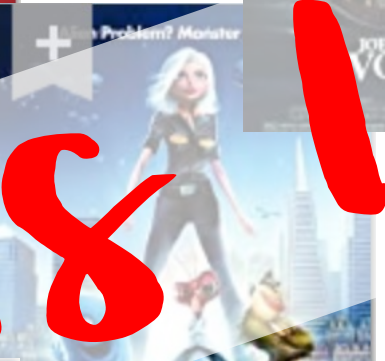
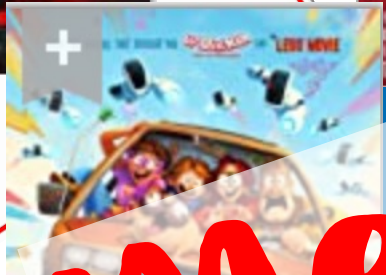




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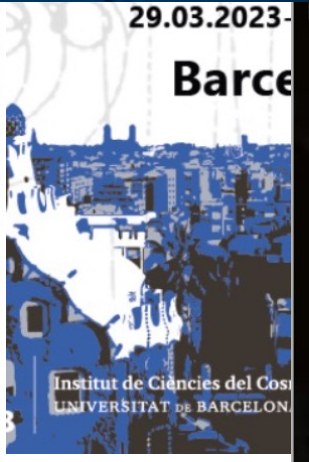
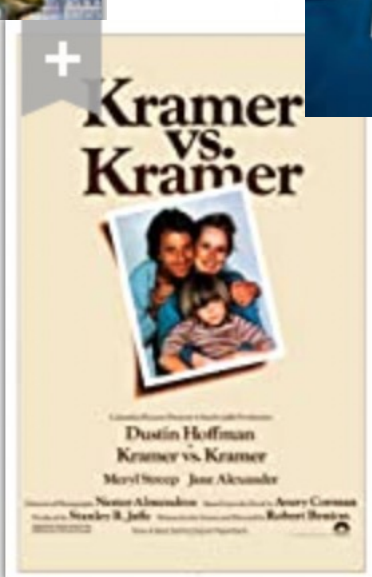


Physics

me vs Lunch

VS. II

atutai



Many thanks to all the speakers and chairs !

Welcome session	Ricardo Vazquez Gomez	PID detectors: 1	Neville Harnew	RTA and offline	Carla Marin Benito
Welcome	Dr Eugeni Graugés et al.	RICH LS4 upgrade	Carmelo D'Ambrosio	Evolution of the LHCb software trigger: past present and future	Sascha Stahl
Facultat de Física	14:00 - 14:10	Facultat de Física	09:00 - 09:20	Facultat de Física	09:00 - 09:20
Workshop intro	Matteo Palutan	RICH LS3 upgrade	Floris Keizer	Approaches beyond the evolutionary baseline	Daniel Campora
Facultat de Física	14:15 - 14:30	Facultat de Física	09:25 - 09:45	Facultat de Física	09:25 - 09:45
Physics vs Detector overview	Tim Gershon	Status of the TORCH R&D project	Thomas Blake	Software framework options for Run 5	Marco Clemencic
Facultat de Física	14:35 - 15:00	Facultat de Física	09:50 - 10:15	Facultat de Física	09:50 - 10:10
Time-resolution optimisation: a joint VELO & ECAL simulation	Tim Evans et al.	New steps towards the PicoCal	Philipp Roloff	R&D on future simulation	Gloria Corti
Facultat de Física	15:05 - 15:25	Facultat de Física	10:20 - 10:35	Facultat de Física	10:15 - 10:35
Mighty tracker studies	Lucia Grillo et al.	PID detectors: 2	Barbara Sciascia	Summaries	Eugeni Graugés
Facultat de Física	15:30 - 15:50	PicoCal simulations and benchmarking	Liupan An	Message from the Spanish Research Agency Director	Domènec Espriu Climent
Detector optimisation: 1	Paula Collins	Facultat de Física	11:10 - 11:25	Facultat de Física	11:10 - 11:35
Detector optimisation: 2	Paula Collins	PicoCal technologies	Loris Martinazzoli	Plans for Run 4	Guy Wilkinson
Towards a global optimisation of the tracker layout: new tools and idea	Frédéric Blanc et al.	Facultat de Física	11:30 - 11:45	Facultat de Física	11:40 - 12:05
Facultat de Física	16:30 - 16:50	PicoCal electronics	Patrick Robbe	Scenarios for Run 5	Vladimir Vava Gilgorov
Simulation infrastructure for optimisation	Mark Whitehead	Facultat de Física	11:50 - 12:05	Facultat de Física	12:15 - 12:40
Facultat de Física	16:55 - 17:15	Muon upgrade	Marco Santimaria	Concluding remarks	Chris Parkes
VELO	Kazuyoshi Carvalho Akiba et al.	Facultat de Física	12:10 - 12:30	Facultat de Física	12:50 - 13:00
Facultat de Física	17:20 - 17:40	PID detectors: 3	Andreas Schopper		
VELO performance studies	Dan Thompson	MURVELL technology for muon upgrade	Евгений Шаров		
Facultat de Física	17:45 - 18:00	Facultat de Física	14:00 - 14:20		
Study of MAPS-based UT for Upgrade II	Jianchun Wang	HCAL contribution to PID at Run4/5	Miriam Calvo Gómez		
Facultat de Física	18:05 - 18:25	Facultat de Física	14:25 - 14:45		
Magnet Stations	Cesar da Silva	Mighty Tracker project overview and plans	Pascal PERRET		
Facultat de Física	18:30 - 18:50	Facultat de Física	14:50 - 15:10		
Tracking detectors: 1	Lucia Grillo	Mighty Tracker: SciFi	Blake Leverington		
		Facultat de Física	15:15 - 15:35		
		Mighty Tracker: CMOS	Klaas Padoken		
		Facultat de Física	15:40 - 16:00		
		Tracking detectors: 2	Eva Vilella Figueras		
		Online and Infrastructure	Renaud Le Gac		
		Future DAQ boards	Julien Langouët		
		Facultat de Física	16:35 - 16:55		
		Upgrade II online system	Tommaso Colombo		
		Facultat de Física	17:00 - 17:20		
		General infrastructure and magnet	Heinrich Schindler		
		Facultat de Física	17:25 - 17:45		
		Radiation protection and safety	Matthias Karacson		
		Facultat de Física	17:50 - 18:10		

- Success of this meeting due to you and all who have worked for the subdetector preparation meetings.

Many thanks to all the speakers and chairs !

Welcome session Facultat de Física	Ricardo Vazquez Gomez 14:00 - 14:10	PID detectors: 1 Facultat de Física	Neville Harnew 09:00 - 09:20	RTA and offline Facultat de Física	Carla Marin Benito 09:00 - 09:20
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		PID detectors: 2	Barbara Sciascia		

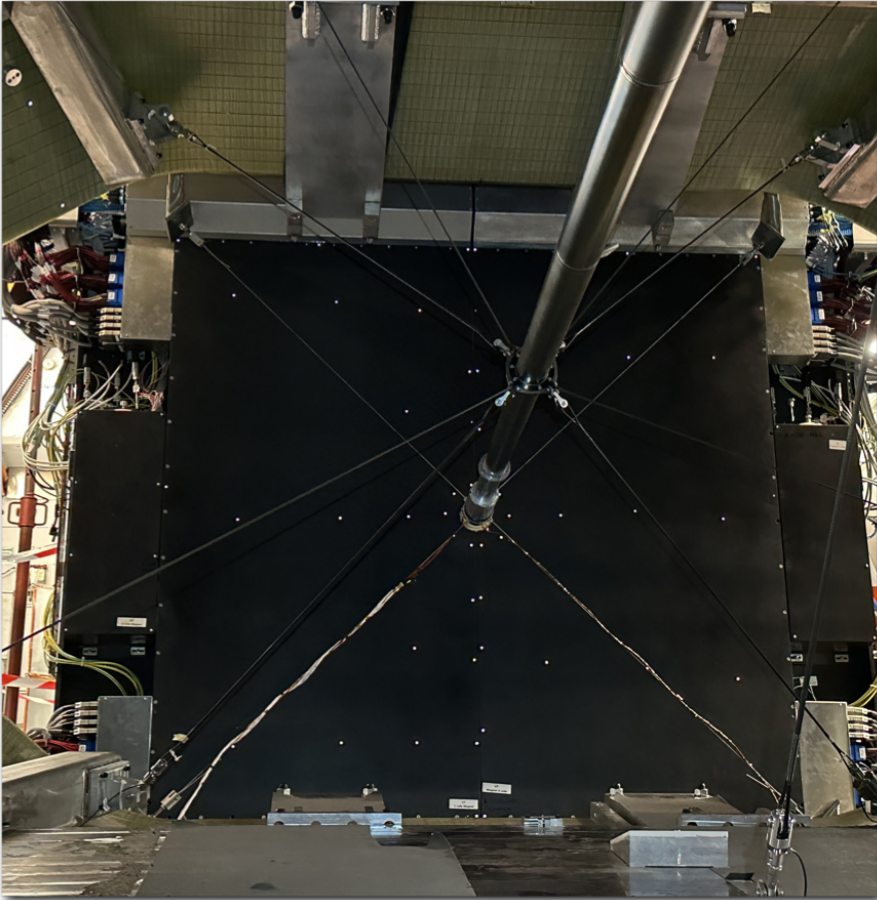
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- All slides are currently publically accessible
 - Open workshop for new participants also
 - Please let us know if your slides have any material that should be protected and available for LHCb members only

Magnet Stations Facultat de Física	Cesar da Silva 18:30 - 18:50	Facultat de Física	14:50 - 15:10
Tracking detectors: 1	Lucia Grillo	Mighty Tracker: SciFi Facultat de Física	Blake Leverington 15:15 - 15:35
		Mighty Tracker: CMOS Facultat de Física	Klaas Padoken 15:40 - 16:00
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		Radiation protection and safety Facultat de Física	Matthias Karacson 17:50 - 18:10

Why has this meeting been so successful ?

Upgrade Installed



- **First occasion on which we have a full upgrade I installed**
- and we know the hardware and software systems are all working
- Now complete commissioning !
- First beams this week
- Volunteer for shifts

Why has this meeting been so successful ?

FTDR approved



APPROVED

LOW
~120 MCHF
conservative

all FTDR descopes

MEDIUM
~150 MCHF
optimistic, but not
completely unrealistic

some FTDR descopes

FTDR
~175 MCHF

clearly above what can be achieved
by present collaboration

full FTDR option

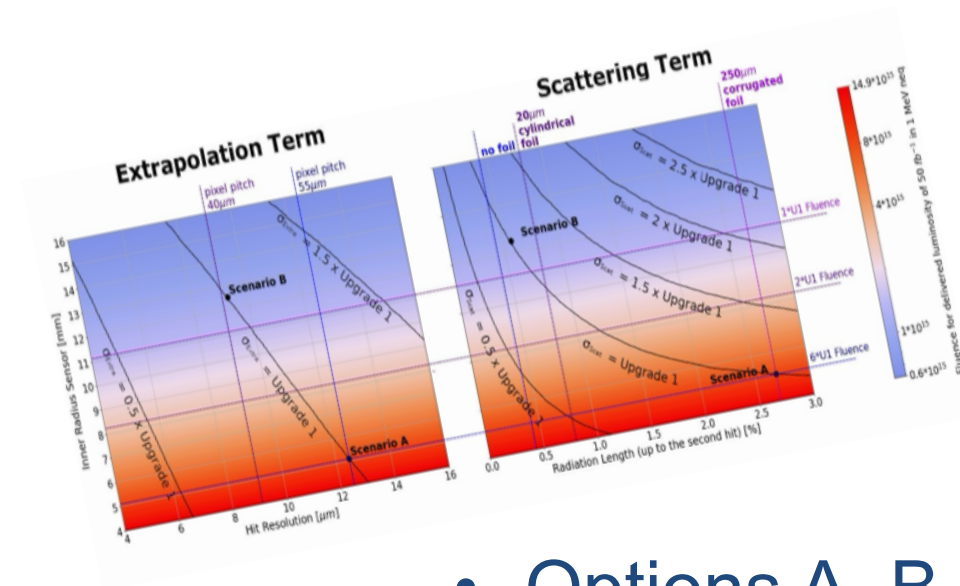
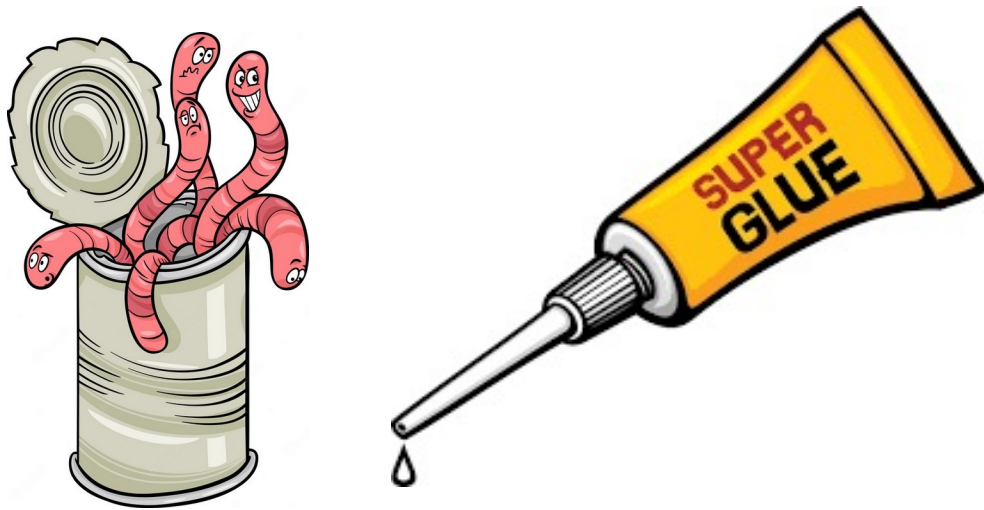
- Resources in right scope

A formative meeting where we got real

Why has this meeting been so successful ?

Constrained maximum likelihood

Maximising likelihood of success within constraints



- Options A, B, C...

Ambitious *and* realistic

Why has this meeting been so successful ?



All of your efforts and participation

Participant List

147 participants

& significant numbers on zoom

Many people I had not seen in person for several years

Why has this meeting been so successful ?



**All of your
efforts and
participation**

**Valery
Pugatch**
Kiev Institute
for Nuclear
Research

Why has this meeting been so successful ?



Secretariat: Anna Argudo and
Esther Pallarés, Cindy Denis

Eugeni Grauges Pous
Ricci Vazquez Gomez

Local Organizing Committee (ICCUB)

Ricard Vázquez Gómez
Carla Marín Benito
Eugeni Graugés Pous
Lluís Garrido Beltran
David Gascón Fora
Esther Pallarés (Scientific Office)
Anna Argudo (Scientific Office)

Scientific Committee

Upgrade II matters are overseen by the U2PG:

Eugeni Grauges Pous (ICCUB)
Chris Parkes (U. Manchester)
Yasmine Amhis (CNRS)
Marcel Merk (NIKHEF)
Guy Wilkinson (U.Oxford)
Renaud Le Gac (CNRS)
Marco Cattaneo (IFISC (CSIC-UIB))
Ken Wyllie (CERN)
Giovanni Passaleva (INFN Florence)

Matteo Palutan (INFN-LNF)
Andreas Schopper (CERN)
Tim Gershon (U. Warwick)
Paula Collins (CERN)
Hassan Jawahery (U. Maryland)
Vava Gligorov (LPNHE/CNRS)
Vincenzo Vagnoni (INFN Bologna)
Eric Thomas (CERN)

Matteo Palutan

Longer travels
than in 2020 but worth it
Safe journey back !