

GOALS OF THE STRATEGY MEETING

[GUIDO BELL + CARMEN DIEZ PARDOS]

TP1 Theoretical
Particle Physics

CPPS Center for Particle
Physics Siegen

HEP Experimental
High Energy Physics

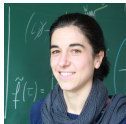
CPPS board



G. Bell



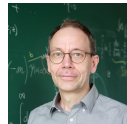
M. Cristinziani



C. Diez Pardos



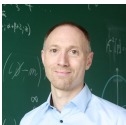
Q. Dorosti



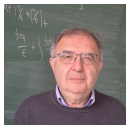
T. Feldmann



I. Fleck



T. Huber



A. Khodjamirian



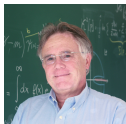
W. Kilian



B. Lange



A. Lenz



T. Mannel



M. Risse



W. Walkowiak

OUTLINE

WHAT IS THE CPPS ?

BRIEF HISTORICAL PERSPECTIVE

SCOPE OF THE CPPS

THE CPPS TODAY

WHY ARE WE HERE ?

GOALS OF THE RETREAT

STRUCTURE OF THE RETREAT

QUIZ

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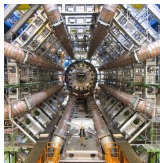
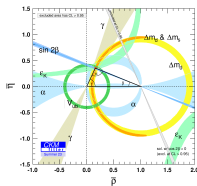
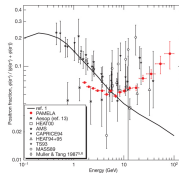
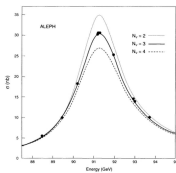
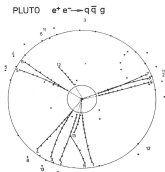
STRUCTURE OF THE RETREAT

QUIZ

A little bit of history

Particle physics has a long tradition in Siegen

- ▶ theoretical studies, experimental analyses, hardware development



Center for Particle Physics Siegen

The CPPS was founded in 2013

- ▶ first center of the School of Science and Technology

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- ▶ members of the founding board



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Later developments

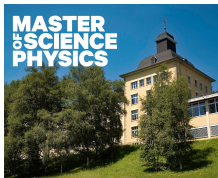
- ▶ Recruitments: G. Bell (2015), A. Lenz (2020), M. Cristinziani (2020)
- ▶ Retirements: A. Khodjamirian (2019), P. Buchholz (2021)
- ▶ Habilitations: T. Huber (2017), C. Diez Pardos (2022)

Scope of the CPPS

The CPPS coordinates the activities of the exp. + theo. particle physics groups

TP1 + **HEP** = **CPPS**

- ▶ strengthen the cooperation among the members of the center
- ▶ increase the visibility within and outside of the university
- ▶ improve the MSc Physics curriculum with focus area particle physics
- ▶ coordinate the applications for joint third-party funding



The CPPS today



Around 20 staff members, 15 postdocs, 25 PhD students, 10 BSc + MSc students

⇒ by far the largest physics group at the university

The CPPS today

Diverse research portfolio:

- ▶ Theoretical and phenomenological studies of bottom-quark decays
- ▶ Precision calculations within and beyond the SM using effective field theories
- ▶ Strong interactions in QCD perturbation theory and in non-perturbative approaches
- ▶ Theory of electroweak interactions and Monte Carlo development
- ▶ Experimental top-quark physics at ATLAS
- ▶ Pixel detectors (ATLAS), tracking chambers (IAXO), imaging procedures in medicine
- ▶ Investigation of ultra-high-energy cosmic rays with the Pierre Auger Observatory

⇒ strong focus on the physics of the 3rd quark generation

The CPPS today

Current activities:

- ▶ Color meets Flavor: Application for Excellence Cluster with Bonn + Dortmund
- ▶ First thoughts about a coordinated PhD school
- ▶ CPPS seminar (~ 5 talks per semester)
- ▶ Master seminar (LHC physics, 3rd quark generation, particle discoveries, ...)
- ▶ Outreach activities (Masterclasses, Physik im Apollo, Subatomic Heroes, ...)
- ▶ New layout for our websites



Physik im
Apollo
Für alle



New TP1 website

Theoretische Elementarteilchenphysik



New CPPS website

Center for Particle Physics Siegen



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Goals of the retreat

In these two days in the beautiful surroundings of the Sauerland we want to

- ▶ get to know each other
- ▶ identify research topics of common interest
- ▶ coordinate our activities to raise third-party funding
- ▶ identify topics for joint Master/PhD lectures
- ▶ collect ideas for improving the Master/PhD program
- ▶ brainstorm for future outreach activities
- ▶ have fun!



Thursday

08:00	Breakfast	
	Landhaus Nordhelle	08:00 - 09:00
09:00	Introduction: Aim of this strategy meeting	<i>Bell Guido et al.</i>
	Landhaus Nordhelle	09:00 - 09:30
	Activity and Plans: Theoretical Particle Physics	<i>Prof. Alexander Lenz</i>
10:00	Landhaus Nordhelle	09:30 - 10:30
	Coffee and Tea	
	Landhaus Nordhelle	10:30 - 11:00
11:00	Activity and Plans: Experimental Particle Physics	<i>Prof. Markus Cristinziani</i>
	Landhaus Nordhelle	11:00 - 12:00
12:00	Strategy and Plans of the University	<i>Prof. Thomas Mannel</i> 
	Landhaus Nordhelle	12:00 - 12:30
	Lunch	
13:00	Landhaus Nordhelle	12:30 - 13:30

Thursday

08:00	Breakfast Landhaus Nordhelle	Paralel 1: Standard Model Bell Guido, Carmen Diez Pardos Landhaus Nordhelle	Paralel 2: Top-Bottom BSM Prof. Markus Cristinziani, Thorsten Feldmann Landhaus Nordhelle
09:00	Introduction: Aim of this strategy meeting Landhaus Nordhelle	14:00	13:30 - 15:00
	Activity and Plans: Theoretical Particle Physics Landhaus Nordhelle	15:00	13:30 - 15:00
10:00	Coffee and Tea Landhaus Nordhelle	Hike Meinerzhagen	15:00 - 16:30
11:00	Activity and Plans: Experimental Particle Physics Landhaus Nordhelle	Paralel 3: Scientific Computing Oliver Witzel, Tobias Huber, Wolfgang Walkowiak Landhaus Nordhelle	16:30 - 18:00
	Strategy and Plans of the University Landhaus Nordhelle	Paralel 4: Data analysis and Fits Diptarama Biswas, Eleonora Guido, Gilberto Testa/matzi-Xolocotzi Landhaus Nordhelle	16:30 - 18:00
12:00	Lunch Landhaus Nordhelle	Paralel 5: Astroparticle Physics Dr. Marcus Niechoj, Markus Risse, Tom Tong Landhaus Nordhelle	16:30 - 18:00
13:00		Poster: Poster Session: Every PhD student + young PostDocs Ebjorn Lange	18:00 - 19:30
		Dinner Landhaus Nordhelle	19:30 - 20:30

Friday

08:00	Breakfast Landhaus Nordhelle 08:00 - 09:00		
09:00	Parallel 7: Senior staff: strategic discussions Prof. Alexander Lenz Landhaus Nordhelle 09:00 - 10:30	Parallel 8: Young scientists matters Anastasia Boushmelev, Eleftheria Malami, Katharina Voß Landhaus Nordhelle 09:00 - 10:30	
10:00	Coffee and Tea Landhaus Nordhelle 10:30 - 11:00		
11:00	Parallel 1: Standard Model Bjell Guido, Carmen Diez Pardos Landhaus Nordhelle 11:00 - 12:30	Parallel 2: Top-Bottom BSM Prof. Markus Czaknanski, Thorsten Feldmann Landhaus Nordhelle 11:00 - 12:30	Parallel 3-4: Scientific Computing + Data analysis and fits Diprapsama Biswas, Eleonora Guido, Gábor Tófalvai, Károly Csikós, Oliver Witzel, Tobias Huber, Wolfgang Walkowiak Landhaus Nordhelle 11:00 - 12:30
12:00	Lunch Landhaus Nordhelle 12:30 - 13:30		
13:00	Reporting by the parallel groups (10 min each) Landhaus Nordhelle 13:30 - 14:30		
14:00	Farewell Landhaus Nordhelle 14:30 - 15:00		

Quiz

Who is who?

- ▶ 14 board members = 14 questions
- ▶ guess who can be associated with these fun facts
- ▶ we will draw random teams of 2-3 non-staff members (theo+exp) after the talk
- ▶ submit your answers tomorrow before the start of the first session

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Note to the board members

- ▶ in the unlikely case that a question applies to more than one person, please tell us silently after the talk!



The people



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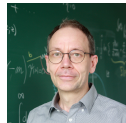
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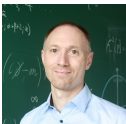
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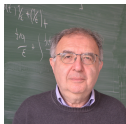
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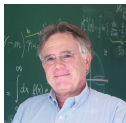
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Whose first car could be started with a hand crank?

Enjoy the retreat!