

# Session 1: Physics cases for a next collider

---

- 10:55 - 11:00 Me talking right now
- 11:00 - 11:30 Pitches
  - Juan Rojo (zoom): Standard Model Effective Field Theory (and PDFs)
  - Susanne Westhoff (zoom): Dark sectors - zoom
  - Marco van Leeuwen: (high density) QCD
  - Ann-Kathrin Perrevoort: flavor physics
  - Frank Filthaut: Higgs physics
  - Robin Hayes: BSM searches
  - Andreas Freise: connections gravitational waves and future colliders
- 11:30 - 11:50 Discussion summarizing physics cases.
- 11:50 - 12:15 Discussion prioritizing physics cases.

# Session 1: Discussion summarizing physics cases.

---

The groups will choose 2 or 3 questions they find interesting:

- Did you learn anything new from these pitches? What was it?
- To what extent do the cases made in these pitches focus on improving precision measurements vs. enabling discovery of new particles or interactions?
- Are there any cases where precision measurements could significantly impact our understanding of fundamental physics?
- To what extent do these physics cases present potential for discovering unexpected or completely new phenomena?
- Can we identify synergies between the various sub-topics?
- What strategies can we employ to maximize the complementarity or overlap between the topics presented?

# Session 1: Discussion prioritizing physics cases.

---

- Each group makes a list: what is a must have vs. nice to have for a future collider?
- Perspectives may differ, so be kind and listen to each other.

## Logistics:

- Groups of 5-6 people from different backgrounds
- Each group will have a facilitator and a scribe. Notes will be taken electronically and sent to: [Panos.Christakoglou@nikhef.nl](mailto:Panos.Christakoglou@nikhef.nl)
- We will sound a horn when it is time to switch to prioritizing physics cases.

# Session 1: Groups and rooms

<b>Group 1 (Vertex)</b>			<b>Group 6 (Vertex)</b>			<b>Group 11 (Positron)</b>		
Panos Christakoglou	ALICE		<b>Lydia Brenner</b>	ATLAS	<b>chair</b>	Frank Filthaut	ATLAS	
Andrea García Alonso	ATLAS		Johannes Michel	Theory		<b>Mengqing Wu</b>	ATLAS	<b>chair</b>
Vanessa Mexner	Communication		<b>Auke-Pieter Colijn</b>	DM	<b>scribe</b>	Harm Schoorlemmer	CR	
Uwe Kraemer	DR&D		Alessandro Bertolini	GW		Enzo Tapia	GW	
<b>Melissa van Beekveld</b>	Theory	<b>chair</b>	Ann-Kathrin Perrevoort	LHCb		Andrii Usachov	LHCb	
<b>Jorgen D'Hondt</b>	Management	<b>scribe</b>	Roel Aaij	PDP		<b>Robert Fleischer</b>	Theory	<b>scribe</b>
<b>Group 2 (Colloquium room)</b>			<b>Group 7 (Vertex)</b>			<b>Group 12 (Veltman centre)</b>		
<b>Alessandro Grelli</b>	ALICE	<b>scribe</b>	Susanne Westhoff	Theory		Juraj Klaric	Theory	
<b>Robin Hayes</b>	ATLAS	<b>chair</b>	<b>Hella Snoek</b>	ATLAS	<b>chair</b>	<b>Ivo van Vulpen</b>	ATLAS	<b>scribe</b>
Pieter van Braam van Vloten	PZ		<b>Patrick Decowski</b>	DM	<b>scribe</b>	Kristof De Bruyn	LHCb	
Teresa Bister	CR		Andreas Freise	GW		Martin van Beuzekom	DR&D	
Jacco de Vries	LHCb		Gerhard Raven	LHCb		<b>Flavia de Almeida Dias</b>	ATLAS	<b>chair</b>
Arjen Van Rijn	Management		David Groep	PDP		Mick Mulder	LHCb	
<b>Group 3 (Vertex)</b>			<b>Group 8 (Datacenter)</b>			<b>Group 13 (Zoom)</b>		
Mike Sas	ALICE		<b>Jordy de Vries</b>	Theory	<b>chair</b>	Jos Vermeulen	ATLAS	
<b>Peter Kluit</b>	ATLAS	<b>scribe</b>	<b>Marcel Vreeswijk</b>	ATLAS	<b>scribe</b>	Juan Rojo	Theory	
Cristina Galea	CR		Maxime Pierre	DM		Jory Sonneveld	DR&D	
<b>Niels van Bakel</b>	DR&D	<b>chair</b>	Maria Haney	GW		<b>Suzan Basegmez du Pree</b>	LHCb	<b>scribe</b>
Wouter Waalewijn	Theory		Mara Senghi Soares	LHCb		<b>Wouter Hulsbergen</b>	LHCb	<b>chair</b>
Daan van Eijk	Neutrinos		Jeff Templon	PDP				
<b>Group 4 (Vertex)</b>			<b>Group 9 (Library)</b>					
<b>Gijs van Weelden</b>	ALICE	<b>chair</b>	Tristan du Pree	ATLAS				
Marion Missio	ATLAS		<b>Lukas Graf</b>	Theory	<b>chair</b>			
Eric Laenen	Theory		Kelly Weerman	DM				
Dorothea Samtleben	Neutrinos		Bas Swinkels	GW				
Patrick Koppenburg	LHCb		<b>Niels Tuning</b>	LHCb	<b>scribe</b>			
<b>Sascha Caron</b>	ATLAS	<b>scribe</b>	Martine Oudenhoven	Communication				
<b>Group 5 (Vertex)</b>			<b>Group 10 (Electron)</b>					
<b>Marco van Leeuwen</b>	ALICE	<b>scribe</b>	<b>Pamela Ferrari</b>	ATLAS	<b>scribe</b>			
<b>Clara Nellist</b>	ATLAS	<b>chair</b>	<b>Zef Wolffs</b>	ATLAS	<b>chair</b>			
Ronald Starink	CT		Kevin Heijhoff	DR&D				
Maria Laura Piscopo	Theory		Kazu Akiba	LHCb				
Marcel Merk	LHCb		Rosemarie Aben	Management				
James Mead	Neutrinos		Joao Paulo Costa	Technical Department				
Andrej Sarnatskyi	LHCb							