

CPM Introduction for the Rare and Precision Frontier



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Goals of CPM

- Parallels
 - focus on interesting cross-frontier topics
 - develop partnerships and ideas for white papers
 - we assigned sessions to multiple frontiers and then those frontiers organized the session
 - will next show you RPF sessions we co-organized:
 - unfortunately some of these overlap; there was no good solution

RPF Parallels We Co-Lead

- Tuesday
 - 108: Accelerator Probes of Light Dark Matter/Battell/11:30-12:30 PM/
 - 109: Masses and Nature of Neutrinos/Cirigliano/11:30AM -1:30 PM
 - 124: Lattice Gauge Theory for HEP/Blum/1:00-2:30 PM
 - 125: EFTs for New Physics/Petrov/11:30AM -1:15 PM
 - 126: BSM: Direct and Indirect Searches/Bernstein/1:00-2:30 PM
 - 127: Searches for Dark Sectors/Batell/2:00-4:00 PM
 - 130: Enabling Technologies for Low Mass and ps timing Detectors/Artuso/11:30AM-12:30 PM
 - 131: Physics Requirements for HEP Detectors at Colliders/Artuso/12:30-1:30 PM
 - 29: Low Energy Precision Measurements/Winter/3:00-4:00PM
 - 40: Exotic Hadron Spectroscopy/Skwarnicki & Lebed/3:00PM-4:00PM

RPF Parallels We Co-Lead

- Wednesday
 - 150: Dark Matter Complementarity/Toro/12:15-1:00PM
 - 110: Baryon and Lepton Number Violating Processes/ Perez & Pocar/ 1PM
 - 28: Theory Challenges in Precision Measurements/Petrov/1PM
 - 41: Anomalies in Flavor Physics/ DiCanto /1PM
 - 44: New Accelerator Concepts for High Intensity Muon Beams/ Echenard/ 1PM
 - 51: Low Background & Underground Detectors/Pocar/ 3:00 PM

Navigating

- <http://zgecse.web.cern.ch/zgecse/SessionTimeline.html>
- click on Zoom room and you're good to go

Join Webinar							
Join Zoom 1	1. EF Intro (#cpm_ef_intro)	129. Higgs Factories	Zoom 1 Break and Chat	127. Searches for dark sectors			
Join Zoom 2	2. NF Intro	109. Determining the Masses and Nature of Neutrinos	Zoom 2 Break and Chat	71. Instrumentation for Future radio intensity mapping surveys	Break and Chat	97. Neutrinos as Probes of Standard and BSM Particle Physics	
Join Zoom 3	3. CF Intro	77. Quantum Sensors for Wave and Particle Detection	Break and Chat	102. The Roles of QIS in HEP	Break and Chat	Zoom 3 Break	
Join Zoom 4	4. AF Intro	Zoom 4 Break and Chat		126. BSM: direct and indirect searches	Break and Chat	101. Higgs as a probe of new physics	
Join Zoom 5	5. RF Intro	108. Accelerator Probes of Light Dark Matter (keV-GeV)	Zoom 5 Break and Chat	108. Accelerator Probes of Light Dark Matter (keV-GeV)	Zoom 5 Break and Chat	Break and Chat	29. Low-energy precision experiments
Join Zoom 6	6. TF Intro	125. EFTs for new physics sensitivity studies	Zoom 6 Break	128. From Amplitudes to Precision Theory for Future Colliders	Zoom 6 Break	141. Gravitational wave source modelling	
Join Zoom 7	7. UF Intro	Zoom 7 Break and Chat		122. Capabilities needed to execute underground experiments in a broad range of research categories	Break and Chat	Zoom 7 Break	
Join Zoom 8	8. CEF Intro	Zoom 8 Break and Chat		118. Cross-community Mobility in Science	Zoom 8 Break and Chat	Break and Chat	Zoom 8 Break
Join Zoom 9	9. IF Intro and LOIs	Zoom 9 Break and Chat		69. Instrumentation for Future Optical Surveys Colliders - #cpm_topic_69	Break and Chat	51. Requirements for low background and underground detectors	
Join Zoom 10	10. CompF Intro and LOIs	Zoom 10 Break and Chat		81. Computing Requirements/Opportunities NF	Break and Chat	123. Data Handling and AI/ML	
Join Zoom 11		92. Non-perturbative QCD dynamics at colliders	Zoom 11 Break and Chat	124. Lattice Gauge Theory for High Energy Physics	Break and Chat	40. Exotic Hadron Spectroscopy and Interpretation	
Join Zoom 12		130. Enabling technologies for low mass and ps timing detectors	131. Physics requirements for HEP colliders	Break and Chat	70. Instrumentation for Future sub-mm Surveys	Break and Chat	64. Computing Needs of the Accelerator Frontier
Join Zoom 13		136. Heavier particle dark matter $\gg 10$ GeV	Zoom 13 Break and Chat	74. Atomic to Cosmic: Wave Dark Matter and Beyond	Break and Chat		
Join		72. Dark Energy, Origins (Inflation), and Light	139. Testing	Zoom 14 Break and	140. Future medium to ultrahigh energy	Break and Chat	

Plans for White Papers

- White (Contributed) Papers are more formal than LOIs, which were designed to be informal
- ~10 pages, suitable for arXiv
- you can write something longer
- *please have a shorter executive summary at the beginning, making it clear what relation to our frontier is — especially if paper is long!*
- need to be in by Snowmass, with drafts earlier
 - otherwise we can't write report
 - we will be asking for drafts in the Spring and final paper by Snowmass — dates under development

Frontier Meeting

- Modulo COVID-19, planning on Frontier-Wide in-person meeting around June
- Obviously difficult to plan right now
- If we can't do this in-person, will be virtual or possibly hybrid
- have two excellent bidders, process underway

