



Run Number: 294184, Event Number: 424201571
Date: 2018-09-15 05:13:27 UTC



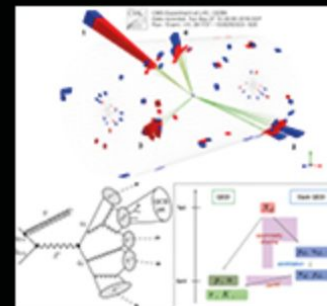
Colours in Darkness:

Towards Improved Modelling of Strongly Interacting Dark-Sector Showers

October 17 – 20, 2023



<https://indico.mitp.uni-mainz.de/event/377>



Sukanya Sinha
University of Manchester

17/10/2023



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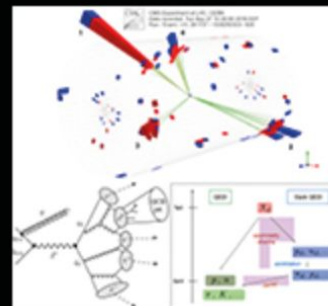
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Thanks to the whole MITP Youngst@rs team, especially Dominika and Olly for helping with the workshop logistics!

Scope of the workshop

Aim to build collaboration and motivate cross-talk between the experimental and theory community dedicated towards developing and understanding the strongly interacting dark sector.

→ understanding the current status of the dark showering module within Monte Carlo generators like Pythia and Herwig, as well as establishing a set of realistic benchmark models that will drive future search strategies.

Link to a live google doc [here](#).

→ to be used as rolling minutes after each talk

→ also for guiding the open discussion sessions that are planned at the end of each day.

At the end of the workshop, we plan to have a Workshop summary report, which will then be uploaded on Zenodo. If you are interested in helping with even a small subset of the summary report, please reach out to me. Any help will be appreciated!

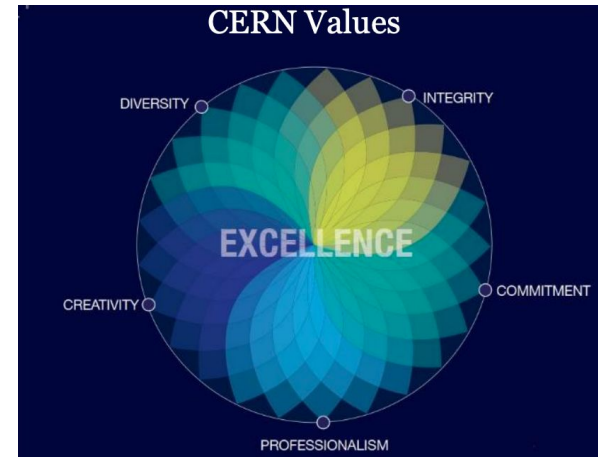
Programme of the Workshop

Day1: Dark showers: Theory and Generator perspective

Day2: Dark showers: Experimental perspective (Run-2 results, lessons learnt, tools/analysis techniques developed)

Day3: Dark showers: Reinterpretability/reproducibility of experimental results, and new final-state signatures

Day4: Plans for ways forward



Programme of the Workshop

Day1: Dark showers: Theory and **Speaker List**

Day2: Dark showers: Experiment
tools/analysis techniques develop

Day3: Dark showers: Reinterpretation
final-state signatures

Day4: Plans for ways forward

1. **Pedro Schwaller** [Emerging jets Phenomenology]
2. **Tim Cohen** [Semi-visible jets Phenomenology]
3. **Deepak Kar** [Semi-visible jets ATLAS result]
4. **Dilia Maria Portillo Quintero** [Dark jet resonances ATLAS result]
5. **Louie Dartmoor Corpe** [Reinterpretation tools]
6. **Aran Garcia-Bellido** [Semi-visible jets CMS result]
7. **Jannicke Pearkes** [Emerging jets CMS result]
8. **Suchita Kulkarni** [Pythia8 Hidden Valley module]
9. **Nishita Desai** [Alternative Hidden Valley configurations]
10. **Dominic Stafford** [Herwig7 dark shower module]
11. **Matt Strassler** [Dark showers: theory paradigm]
12. **Jon Butterworth** [Constraints on new theories using RIVET]
13. **Mark Goodsell** [Dark matter and dark sector complementarity]

Programme of the Workshop

Day1: Dark showers: Theory and Generator perspective

Day2: Dark

tools/analysis

Day3: Dark sh

final-state sign

Day4: Plans for

	Hidden Valley theory landscape	<i>Matt Strassler</i>
		13:20 - 13:40
	Emerging jets phenomenology	<i>Pedro Schwaller</i>
		13:45 - 14:00
14:00	Pythia8 Hidden Valley module developments	<i>Suchita Kulkarni</i>
		14:05 - 14:20
	Coffee break	
		14:25 - 14:40
	Pythia8 alternate dark shower setup	<i>Nishita Desai</i>
		14:40 - 14:55
15:00	Herwig dark shower status	<i>Dominic Stafford</i>
		15:00 - 15:15
	Break	
		15:25 - 15:35
	Open discussion session	
16:00		
17:00		15:35 - 17:05

results, lessons learnt,

experimental results, and new