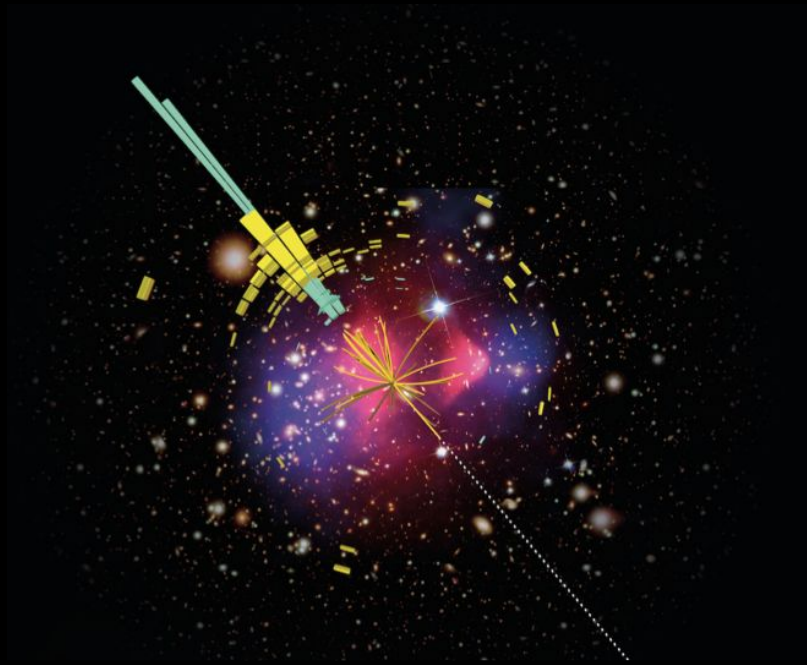


Introduction

LHC DM WG meeting, 12 January 2023



LHC DM WG organisers

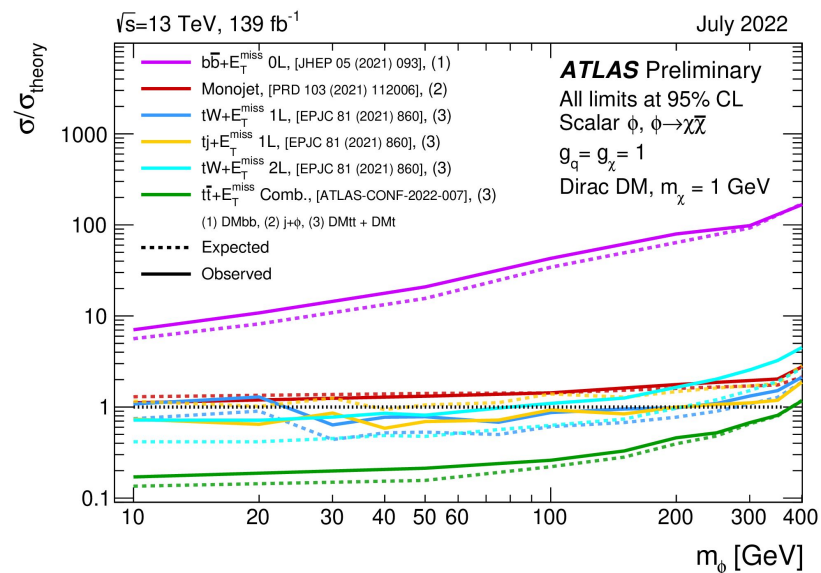
- [LHC DM WG](#)
 - defines benchmarks for DM interpretations at the LHC
 - publishes white papers with recommendations on DM benchmarks
 - facilitates discussions across experiments and theory
- Communication channels
 - lhc-dmwg@cern.ch - general list for announcements
 - lhc-dmwg-contributors@cern.ch - more technical discussion (all subscribers can post)
 - lhc-dmwg-admin@cern.ch - reach the LHC DM WG organisers:
 - ATLAS: Spyros Argyropoulos, James Frost, Zirui Wang
 - CMS: Matteo Cremonesi,
 - LHCb: Xabier Cid Vidal
 - Theory: Uli Haisch, Tim Tait

Meeting schedule

- We would like to start having the LHC DM WG meetings with a regular periodicity
- Tentative proposal: 3 times per year - January, May, September
- Doodle will be circulated ~1 month in advance

Topics for future

- **New DM benchmarks for Run 3?**
 - some benchmarks already running out of steam (e.g. spin-0 $g_\chi = g_q = 1$)
 - extended Higgs sectors (beyond current benchmarks)
 - other models with **uncovered signatures** (e.g. [2204.03510](#))



[ATL-PHYS-PUB-2022-036](#)

Topics for future

- **Endorsements/recommendations**
 - coupling rescaling tool for s-channel interpretations ([2206.03456](#) + [discussion in last meeting](#))
 - t-channel ([2010.07559](#), [2001.05024](#))
 - recommendations for s-channel etc (see last talk on today's agenda)
 - twiki pointing to white papers where they exist?
 - in cases where extra work is needed, certain aspects warrant extended discussion (+ plots) we can think about writing white papers

Today's agenda

2:00 PM	→ 2:15 PM	Introduction	🕒 15m
Speakers: James Frost (University of Oxford (GB)), Matteo Cremonesi (Carnegie-Mellon University (US)), Spyros Argyropoulos (Albert Ludwigs Universitaet Freiburg (DE)), Tim Tait (University of California, Irvine), Uli Haisch, Xabier Cid Vidal (Instituto Galego de Fisica de Altas Enerxias), Zirui Wang (University of Michigan (US))			
2:15 PM	→ 2:45 PM	New t-channel signatures [20+10]	🕒 30m
Speaker: Benjamin Fuks			
2:45 PM	→ 5:05 PM	Semi-Visible Jets	
	2:45 PM	Summary of ATLAS results [15+5]	🕒 20m
Speaker: Deepak Kar (University of the Witwatersrand (ZA))			
	3:05 PM	Summary of CMS results [15+5]	🕒 20m
Speaker: Kevin Pedro (Fermi National Accelerator Lab. (US))			
	3:25 PM	Summary of SVJ workshop [25+10] ¶	🕒 35m
Speaker: Annapaola De Cosa (ETH Zurich (CH))			
	4:00 PM	Semi-visible jets with leptons [20+10]	🕒 30m
Speaker: Cesare Tiziano Cazzaniga (ETH Zurich (CH))			
	4:30 PM	Summary of Snowmass effort [25+10]	🕒 35m
Speaker: Matthew Strassler (Harvard University)			
5:05 PM	→ 5:35 PM	Distinctive signals of frustrated dark matter [20+10]	🕒 30m
https://arxiv.org/abs/2205.06824			
Speaker: Linda Carpenter			
5:35 PM	→ 6:00 PM	Towards a recommendation for DM samples and theory calculations for Run 3: s-channel and Higgs to invisible [15+10]	🕒 25m
Speaker: Spyros Argyropoulos (Albert Ludwigs Universitaet Freiburg (DE))			