

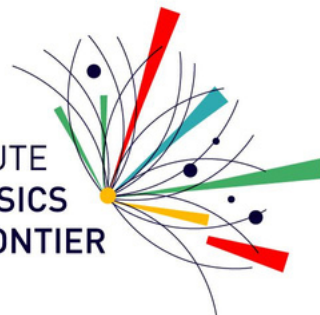
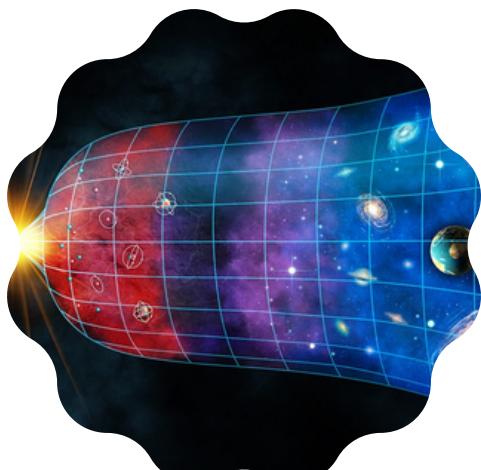
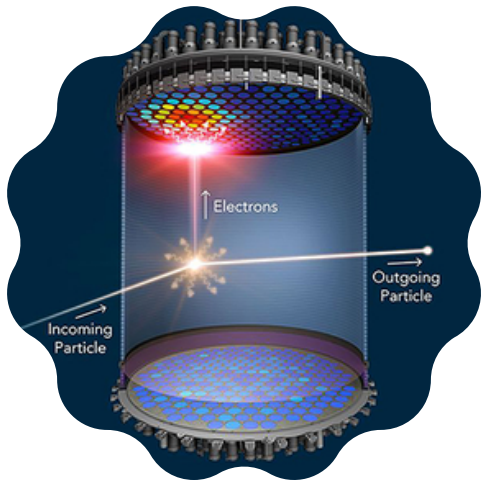
III LASF4RI FOR HECAP SYMPOSIUM

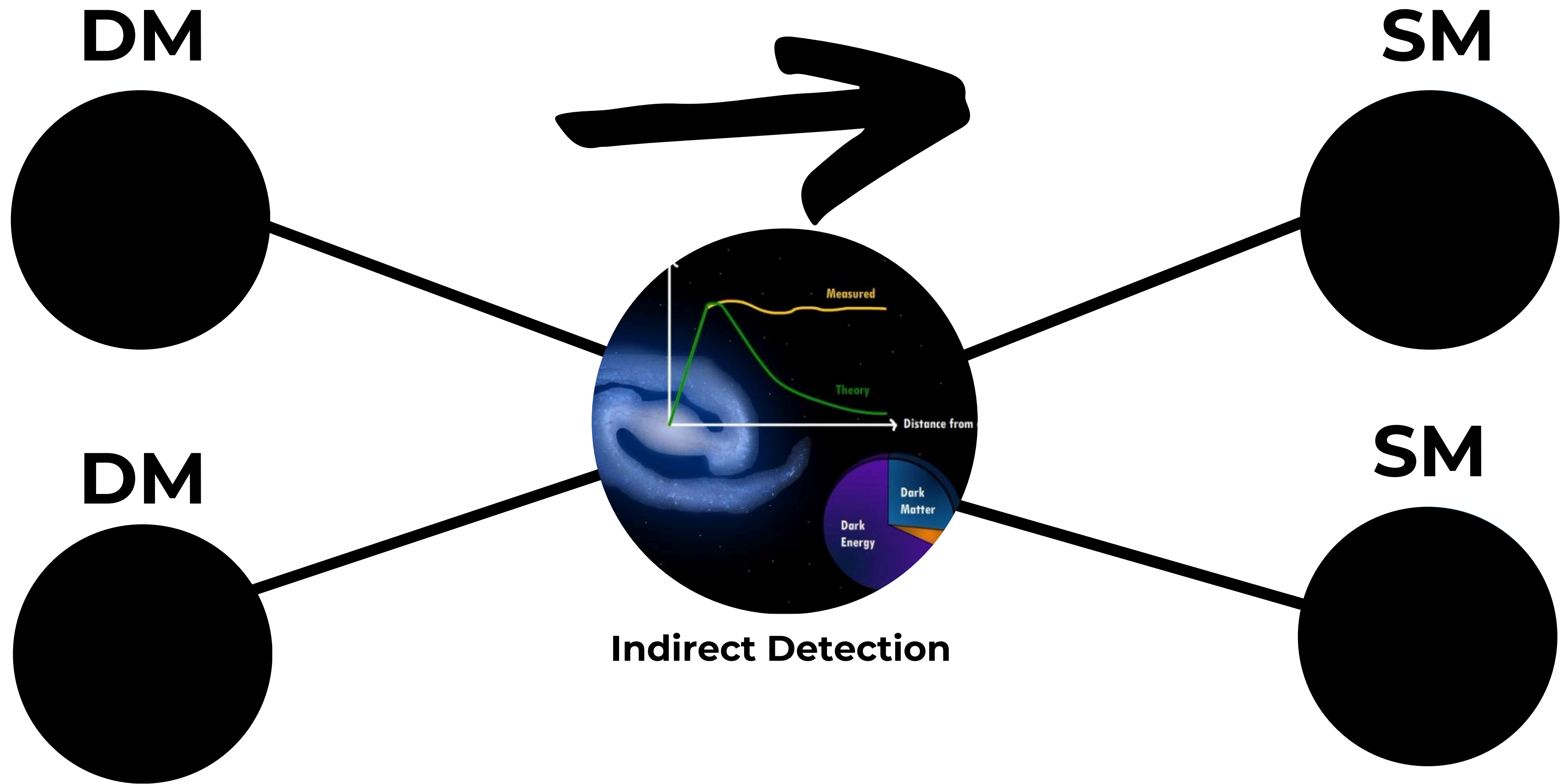
27-August-2024

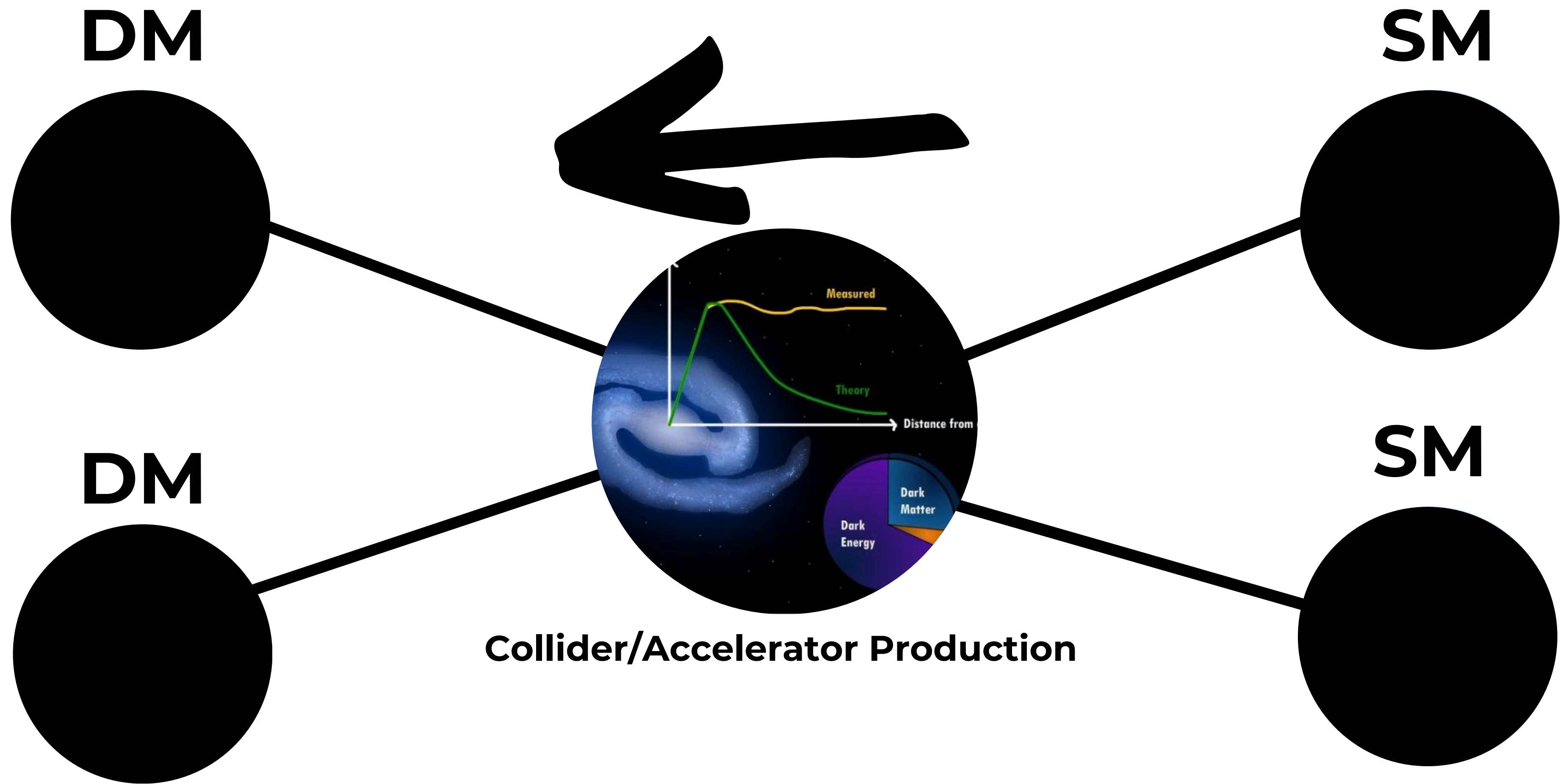
Brazilian Report on Dark Matter 2024

Farinaldo Queiroz

UFRN



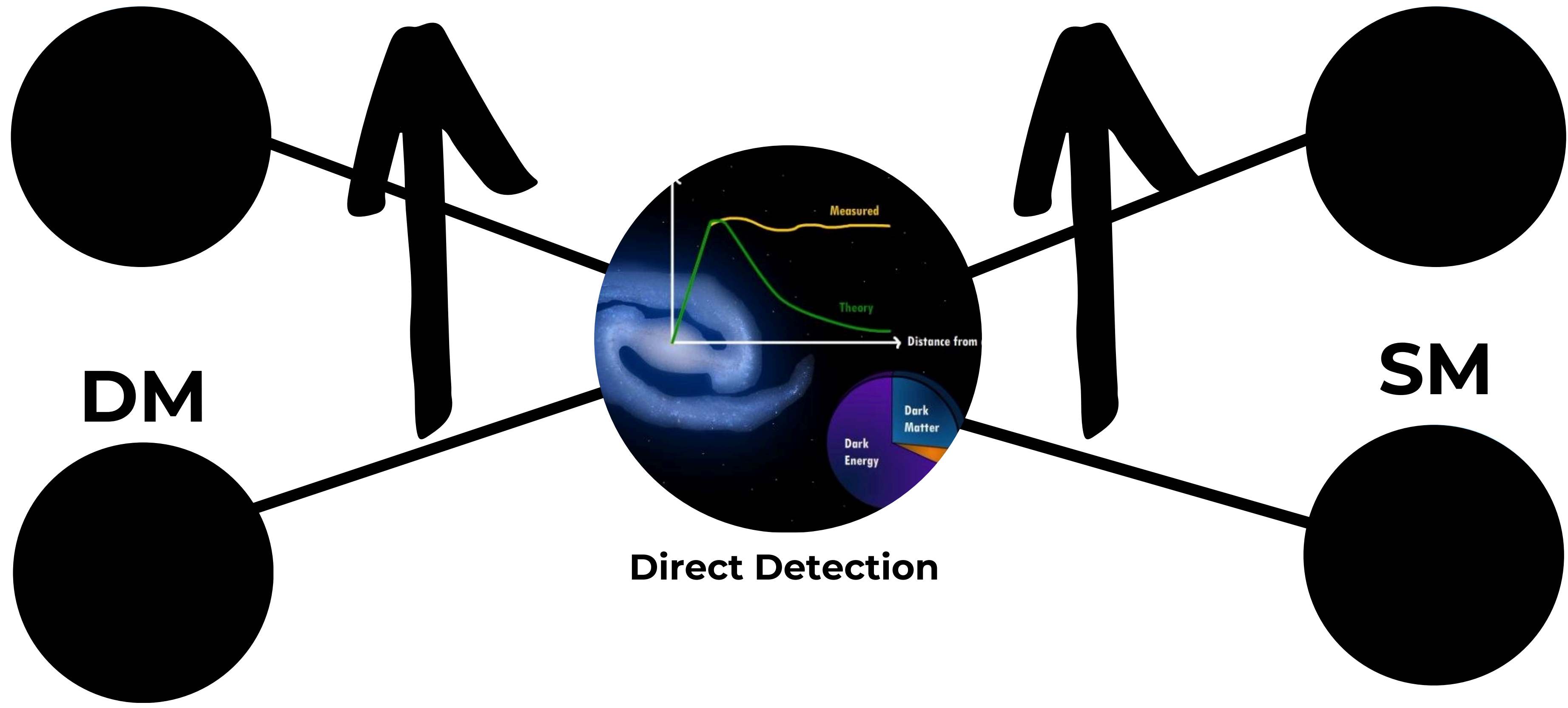




Collider/Accelerator Production

DM

SM



DM

SM

Direct Detection

Collider



Indirect Detection

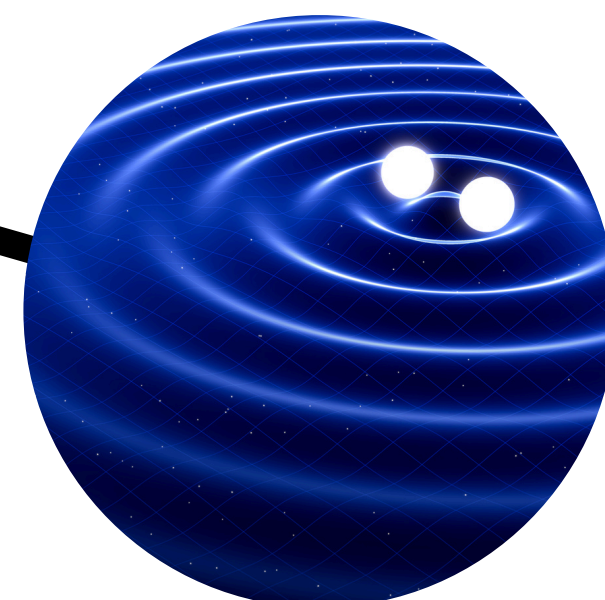


High Energy, Cosmology and Astroparticle Physics

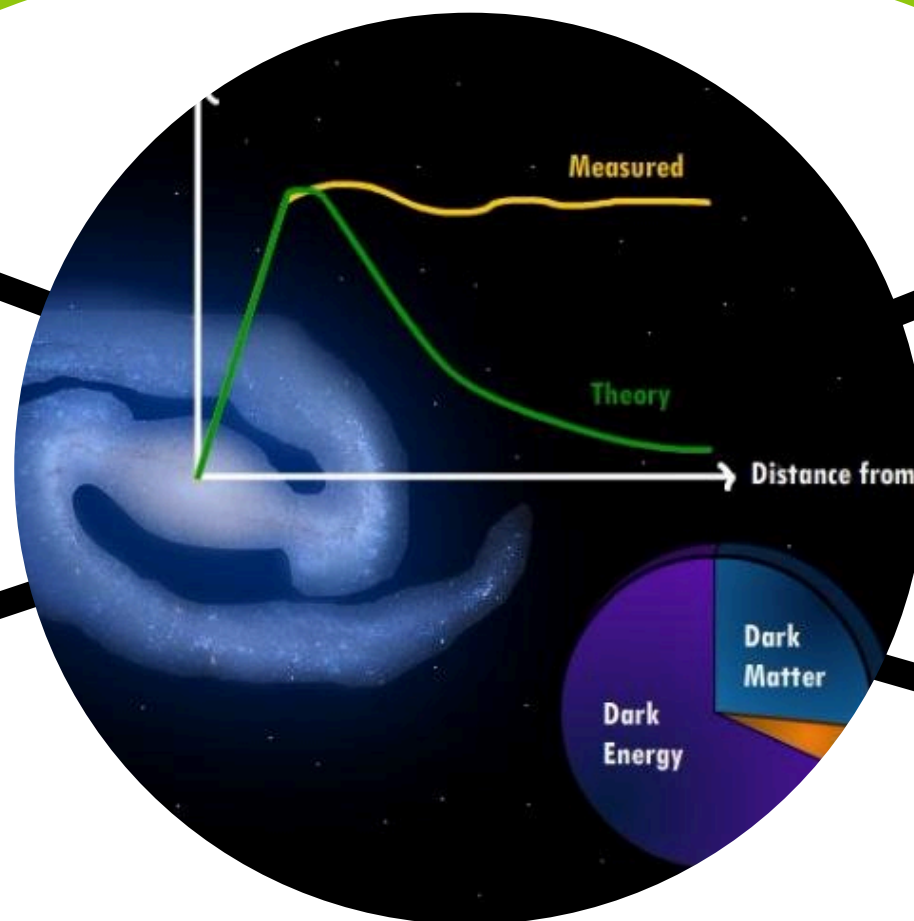
Direct Detection



Gravitational Waves



Dark Matter Landscape



BACK IN 2019



LHCb: CBPF-UFRJ-PUC RIO-UNB-CEFET RJ	ATLAS: UFJF-UFRJ-USP -UERJ-UFBA- [REDACTED]	CMS: CBPF-UERJ- UNESP-UFABC- UNICAMP- [REDACTED]-UFMS- [REDACTED]	LH-LHC: CBPF-UFRJ-PUC RIO-UNB-CEFET RJ-UFJF-USP-UERJ- UFBA-UFRN-UNESP- UFABC-UNICAMP- UFRGS-UFMS-UEAM
FCC: CBPF-[REDACTED]	CTA: CBPF-UFABC- UFPR-USP- UFSCAR- UNESP	[REDACTED]	DARKSIDE: USP
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	DES: USP-LineA- UNESP- UNICAMP-ON
[REDACTED]	CONNIE: UFRJ-CBPF CEFET RJ- ITA-UFABC- PUC	SBND: UNICAMP-ITA -CTI Renato Archer- UNIFAL-UFABC	DUNE: CBPF-UNICAMP- UNIFAL-UFABC- UEFS-UFG [REDACTED]

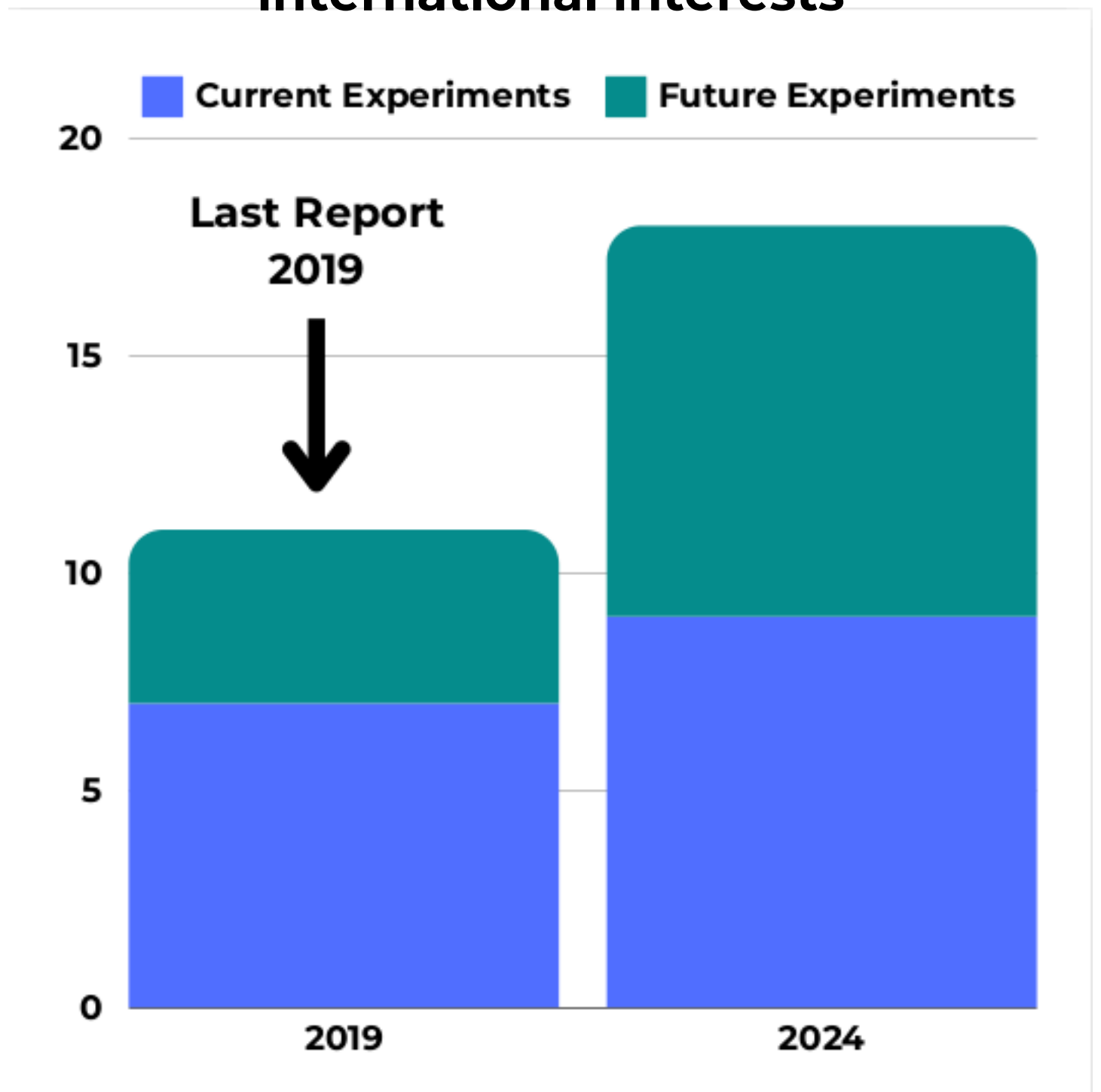
NOW IN 2024



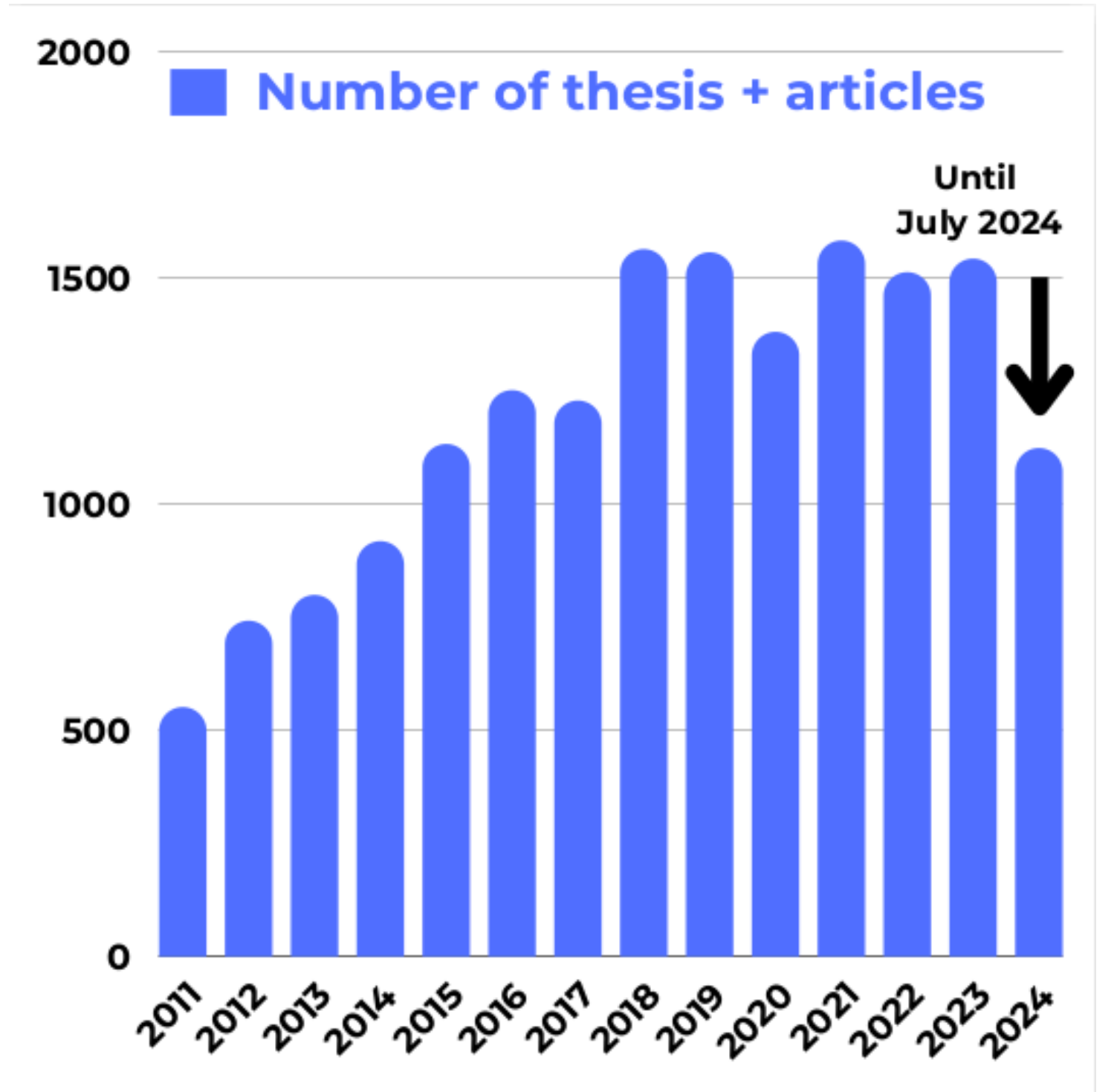
LHCb: CBPF-UFRJ-PUC RIO-UNB-CEFET RJ	ATLAS: UFJF-UFRJ-USP -UERJ-UFBA- UFRN	CMS: CBPF-UERJ- UNESP-UFABC- UNICAMP- UFRGS-UFMS- UEAM	LH-LHC: CBPF-UFRJ-PUC RIO-UNB-CEFET RJ-UFJF-USP-UERJ- UFBA-UFRN-UNESP- UFABC-UNICAMP- UFRGS-UFMS-UEAM
FCC: CBPF-UFRN	CTA: CBPF-UFABC- UFPR-USP- UFSCAR- UFES-UFRN- UNESP	SWG0: CBPF-USP- IFF-UFCG	DARKSIDE: USP
CYGNO: UNICAMP- UFJF-CBPF	OSCURA: UFRJ	LSST: UNESP-LineA- ON-UnB	J-PAS: ON-USP- UFBA-UFRGS
ET: UNESP-UFES -UFF-UFRJ	BINGO: USP-INPE -UFCG-UNIFEI -UES	LISA: UFMG,UFJF	DES: USP-LineA- UNESP- UNICAMP-ON
HYPER-KAMIOKANDE: PUC-RIO	CONNIE: UFRJ-CBPF CEFET RJ- ITA-UFABC- Eletronuclear	SBND: UNICAMP-ITA -CTI Renato Archer- UNIFAL-UFABC	DUNE: CBPF-UNICAMP- UNIFAL-UFABC- UEFS-UFG- UFRJ-UFF-ITA- UTFPR-USP

COMMUNITY

Astroparticle Physics Comm. is aligned with international interests

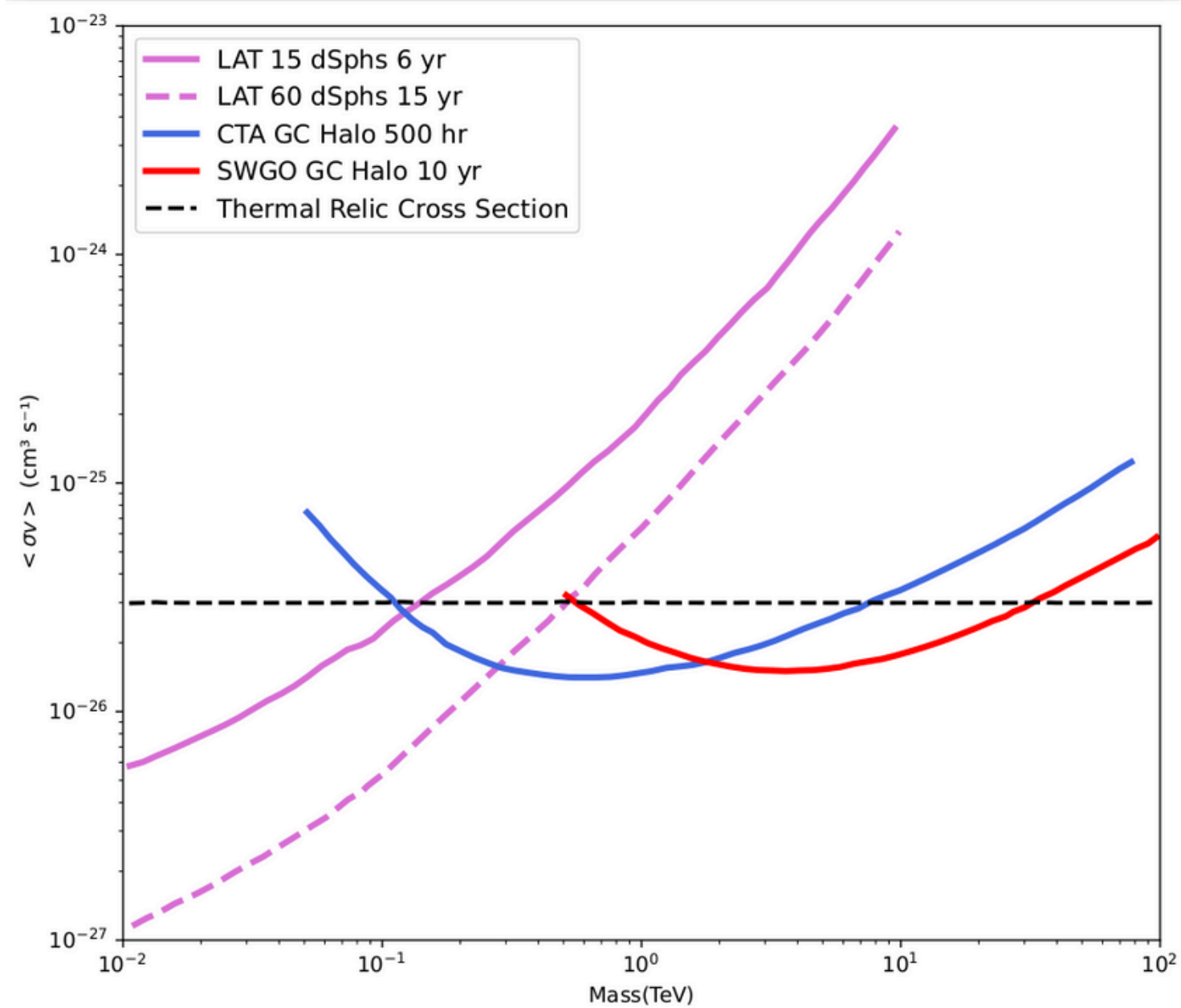


“Dark Matter and/or Dark Sector”

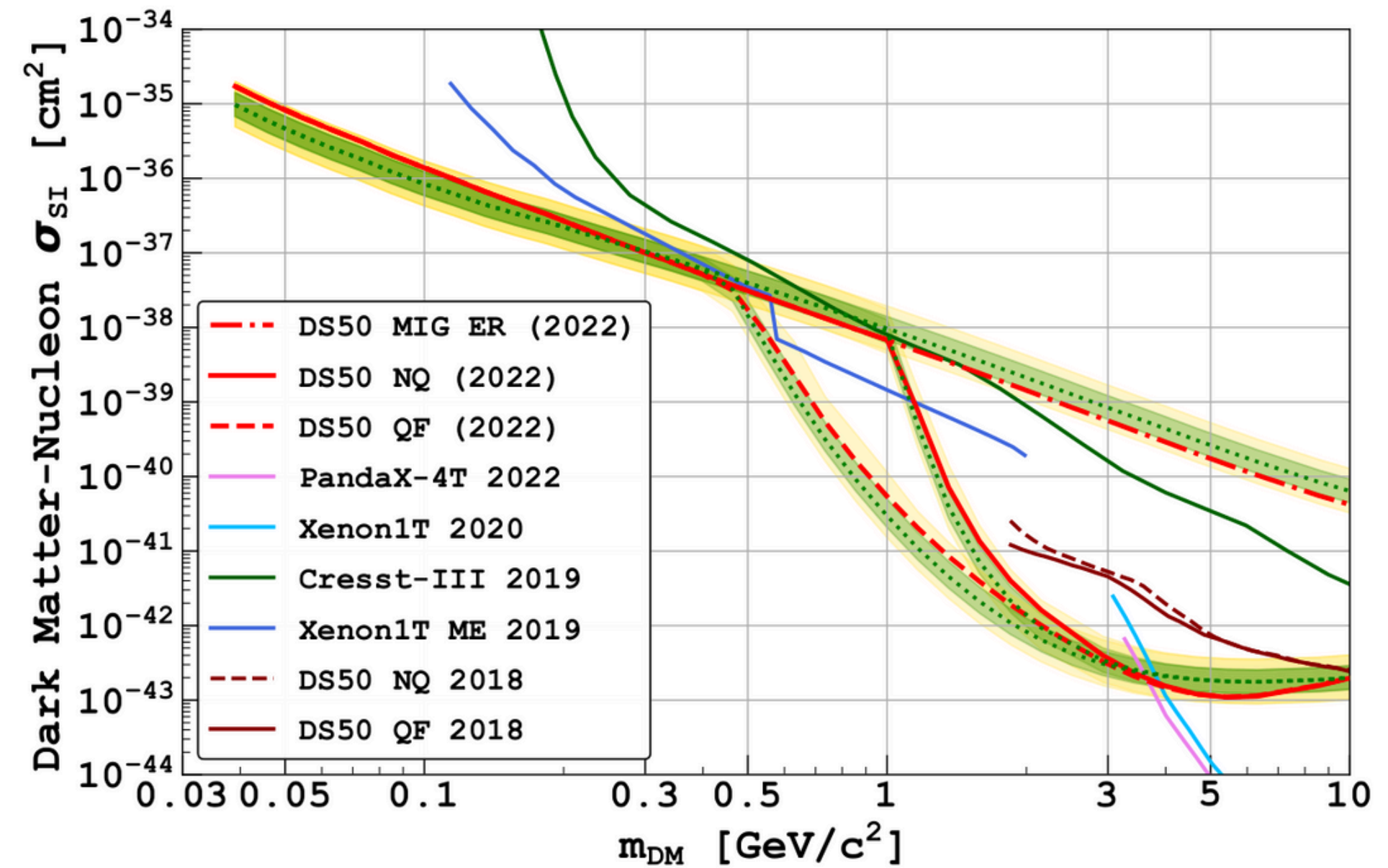


FLAGSHIP EXPERIMENTS

CTAO/SWGO

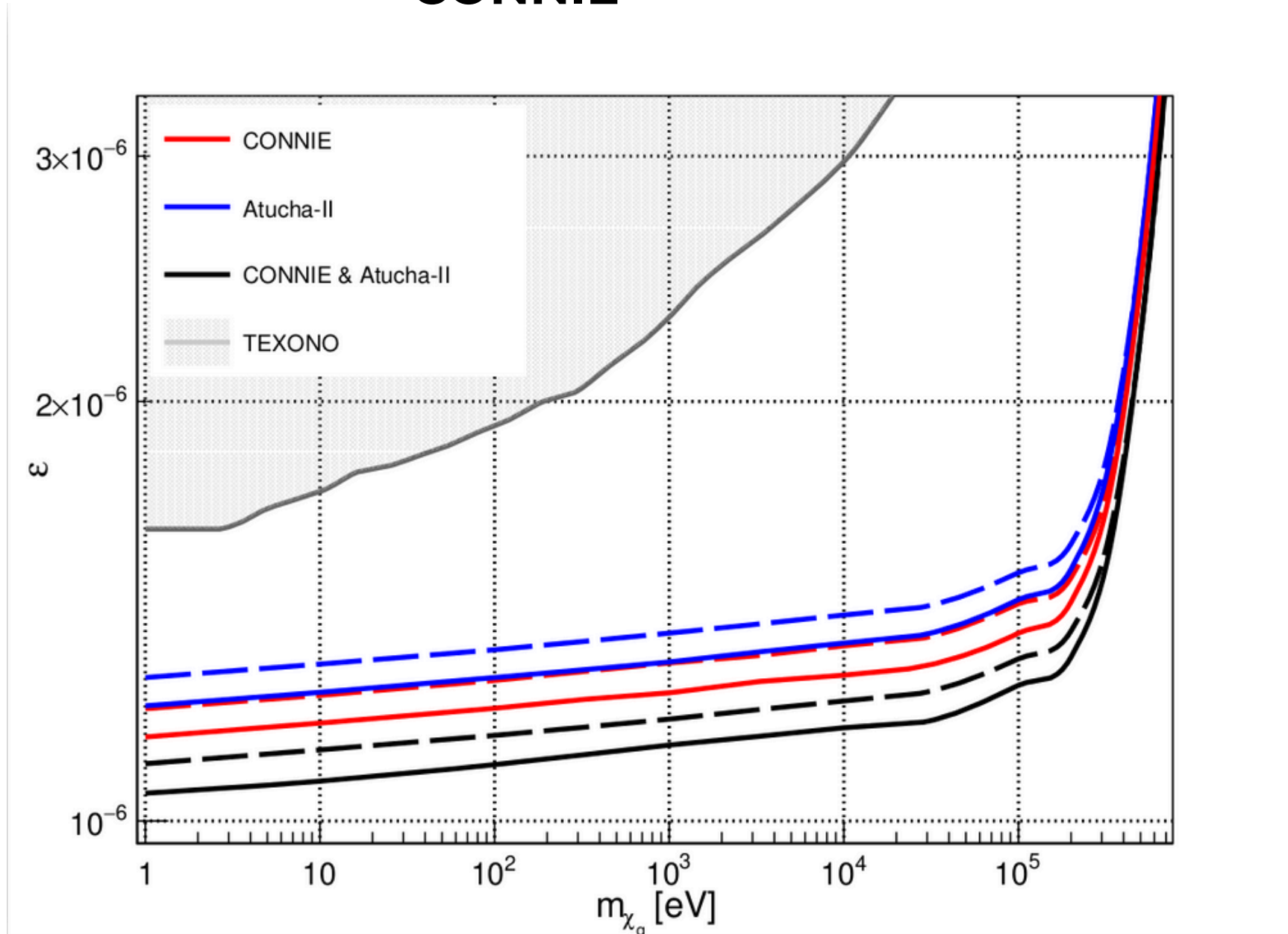


DARKSIDE

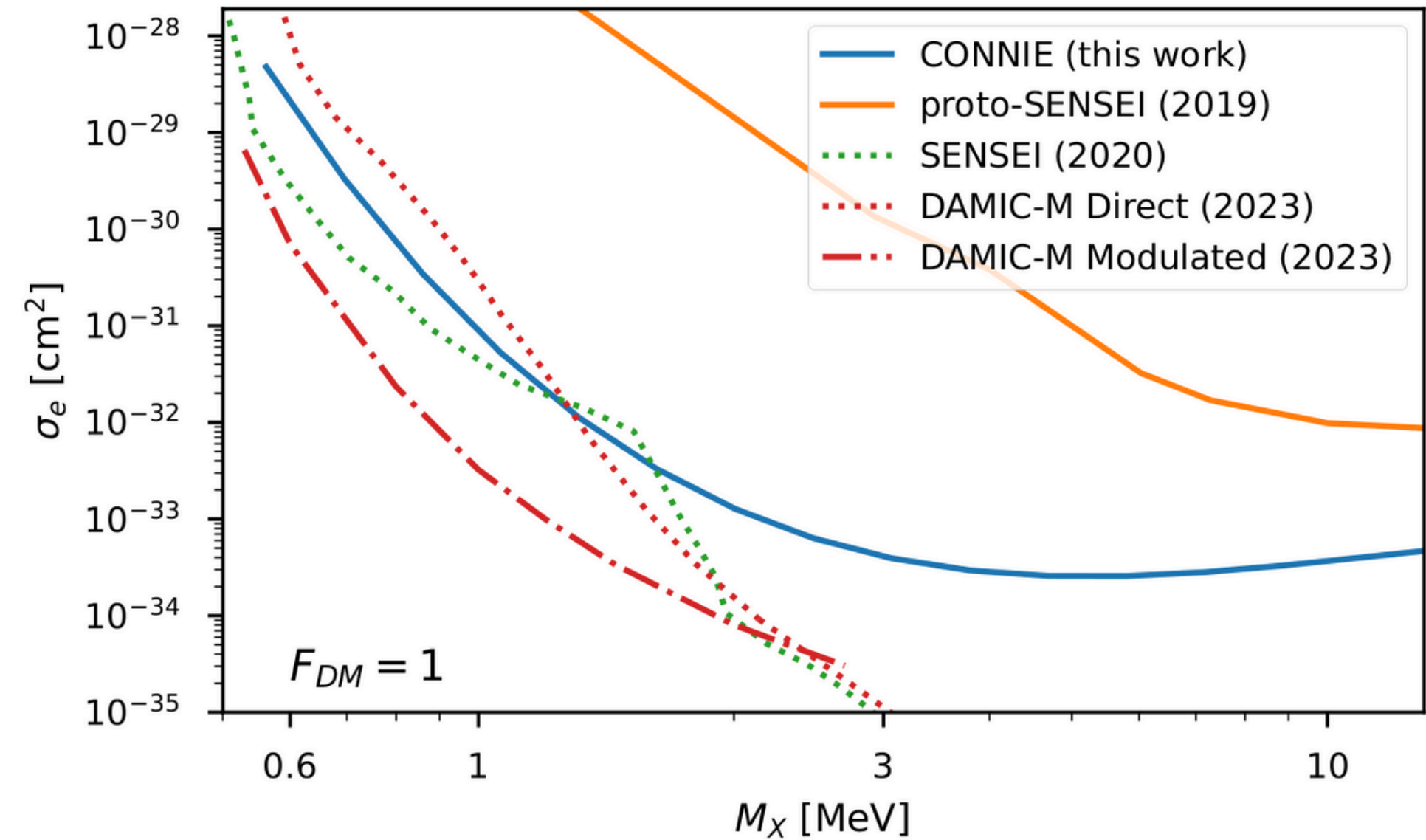


FLAGSHIP EXPERIMENTS

CONNIE

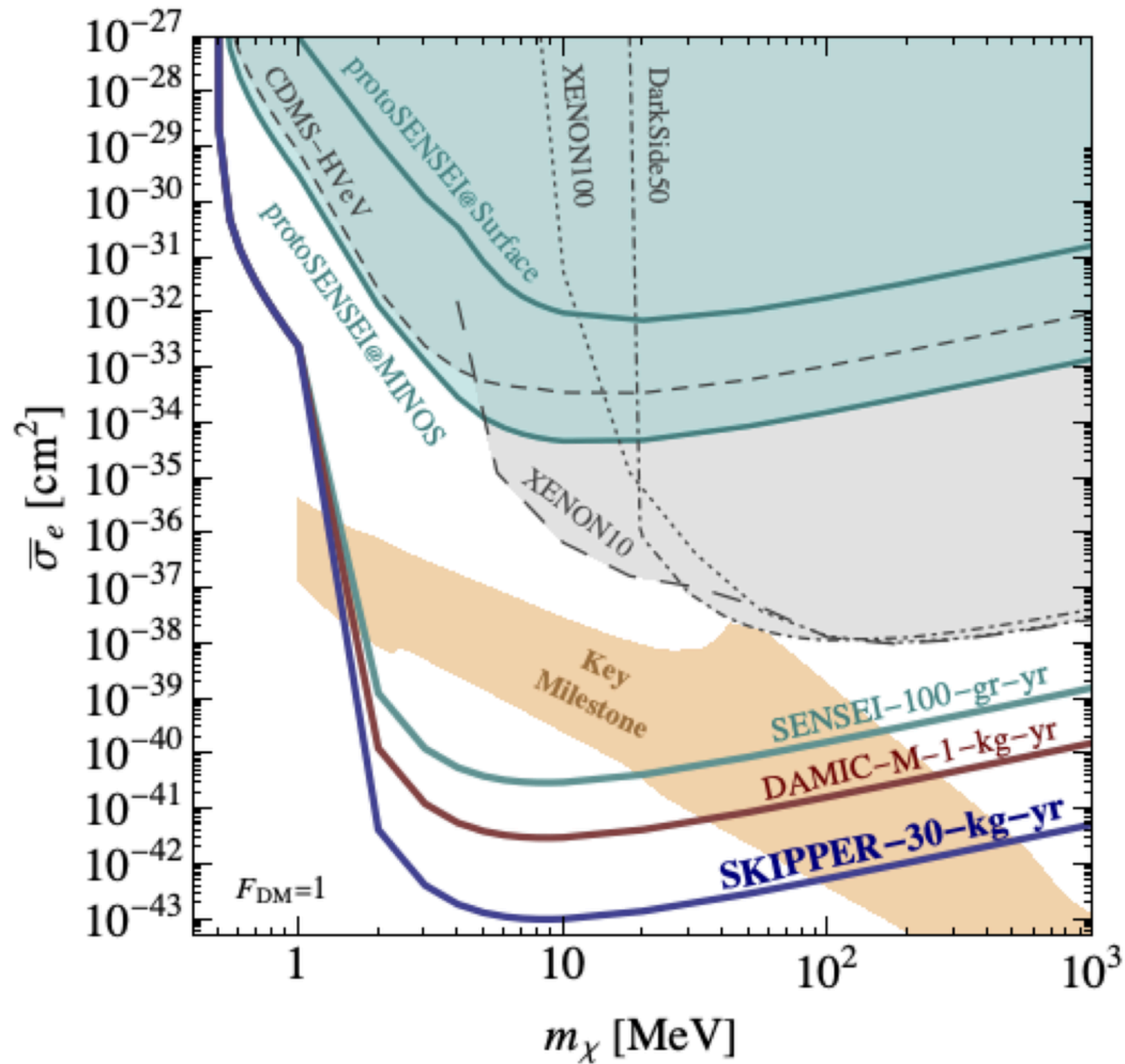


CONNIE



The experiment has been taking data with two Skipper-CCDs of 0.247 g mass each since July 2021, totaling an exposure of 18.4 g-days

FLAGSHIP EXPERIMENTS

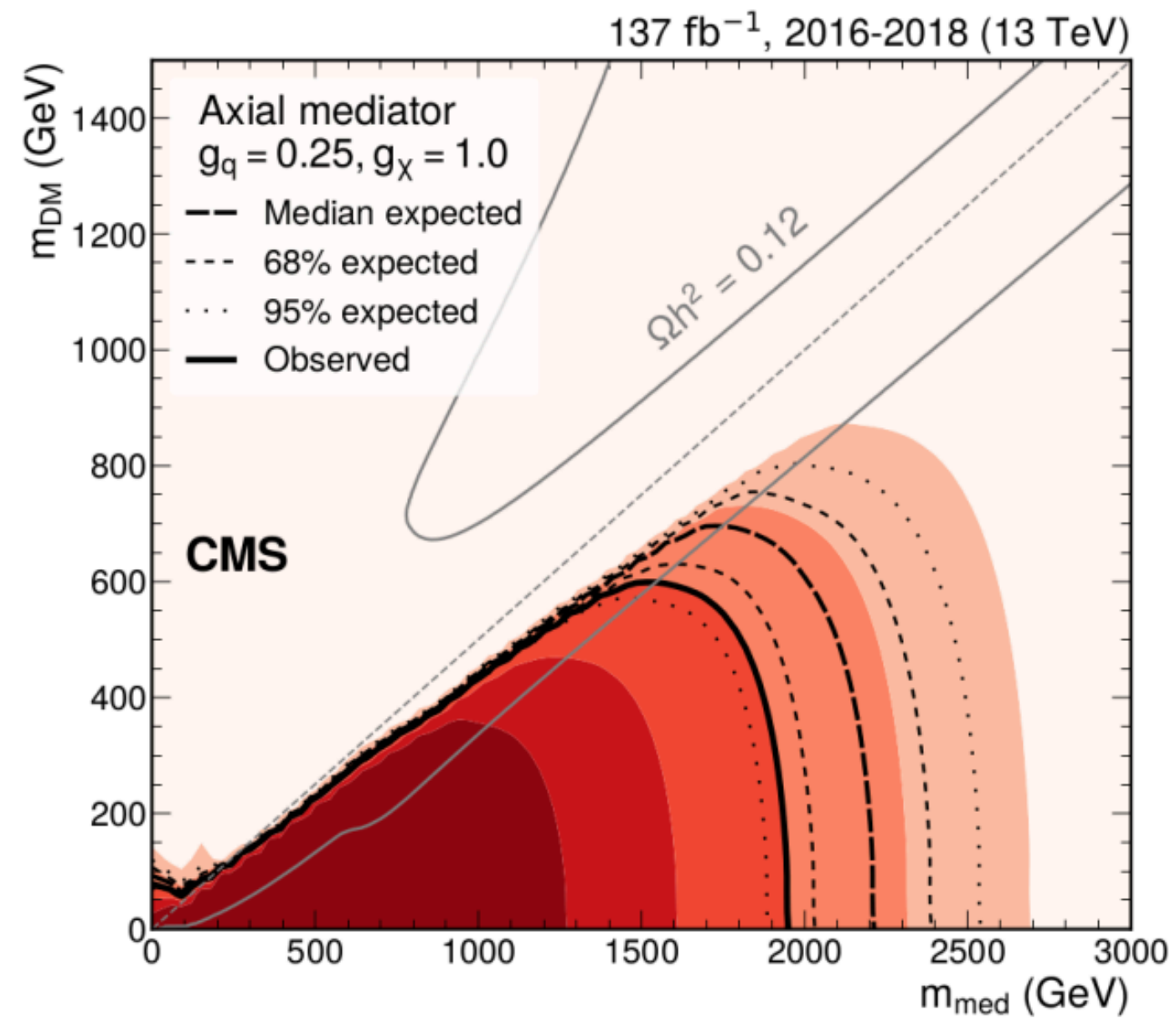


OSCURA

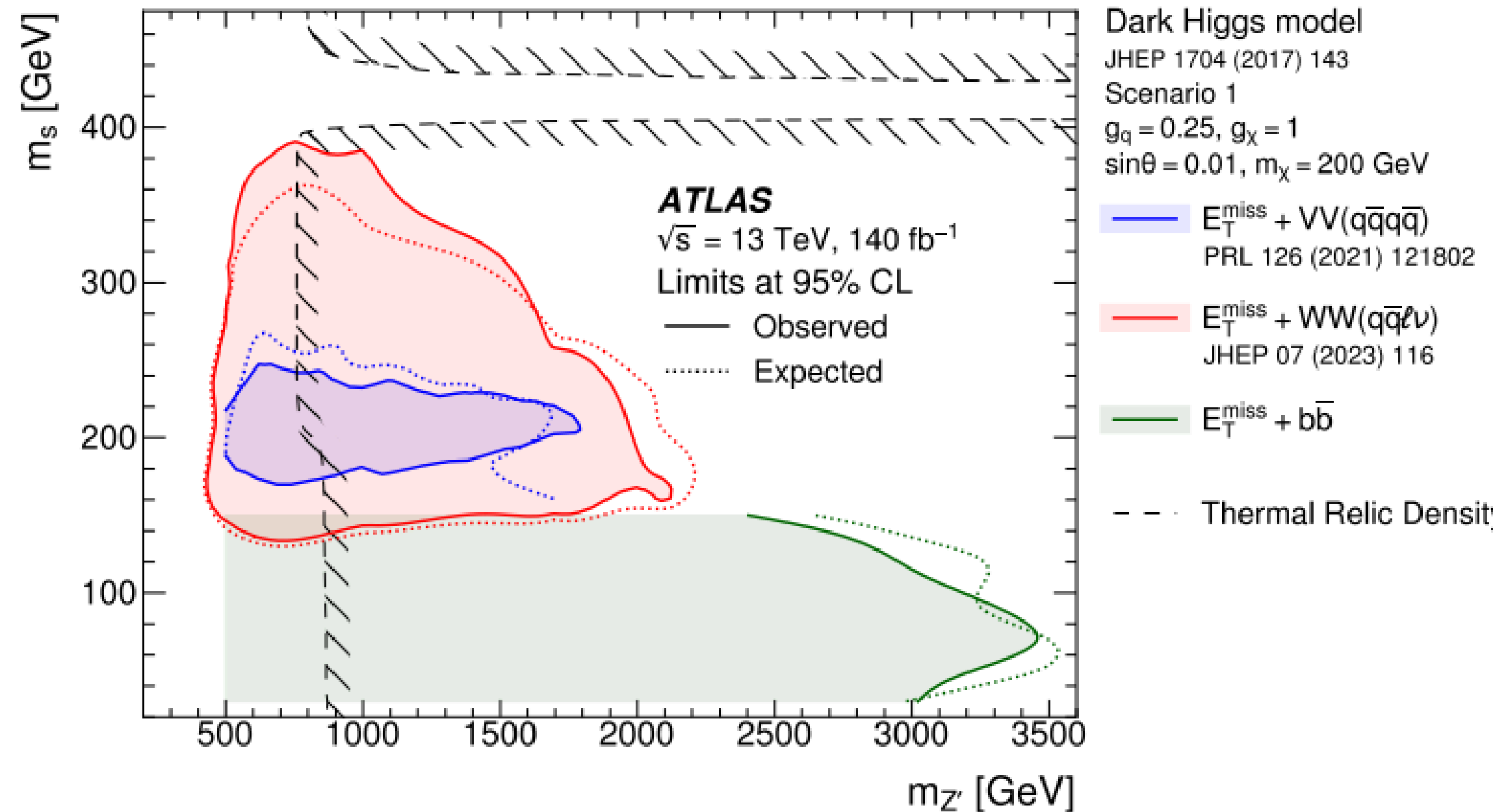
**10-kg (30kg) skipper-CCD experiment
for low mass dark matter search.**

FLAGSHIP EXPERIMENTS

Benchmark Model : Z' portal

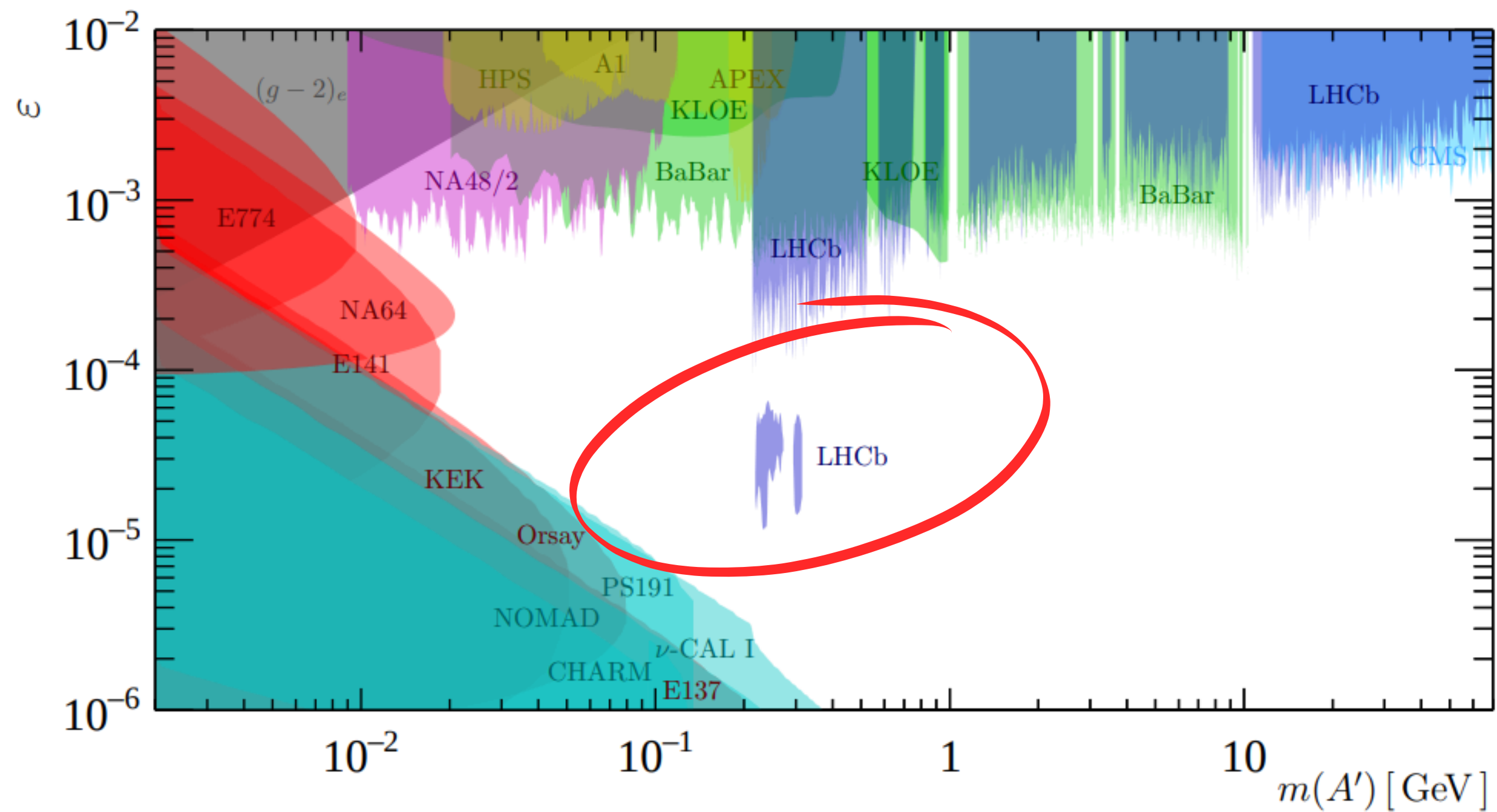


Benchmark Model : Dark Higgs + Z' boson



FLAGSHIP EXPERIMENTS

Benchmark Model : Dark Photon Portal



LHCb collaboration: R. Aaij et al., PRL 124 (2020) 4, 041801 [arXiv:1910.06926 (hep-ex)]

FLAGSHIP EXPERIMENTS

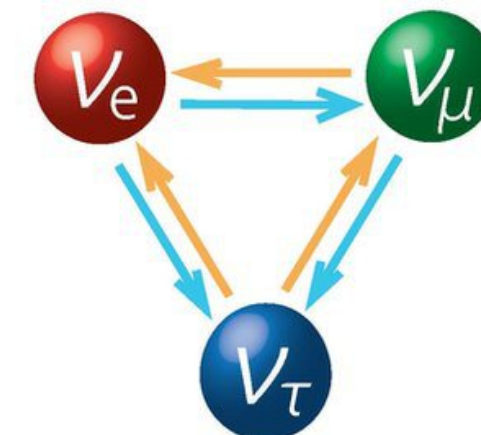
COSMOLOGY AND ASTROPHYSICS FRONTIER

DES
Vera Rubin
J-PAS
BINGO
LISA
ET



NEUTRINO PHYSICS

SBND
DUNE
....



THANK YOU

In 2011: we had the first session dedicated to Dark Matter in the Spring Meeting – Brazilian Physical Society;

In 2022: Astroparticle Physics has been added to the Spring Meeting –Brazilian Physical Society;

2018–2024: Twelve international workshops have been organized

In 2024: Started discussions to join the Dark Matter Working Group@CERN

