RF6: Dark Sector Studies at High Intensity

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Rare and Precision Frontier Topical Convener Meeting

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LOIs

- We got 23 LOIs, with RF as the primary frontier. These will be invited to give a talk at the town hall meeting (8+2min)

We merged a few of them (20 talks in total) :

Light Dark Matter eXperiment **&** Muon Missing Momentum experiment (10+2min)

Fixed-Target Searches for New Physics with O(1 GeV) Proton Beams at Fermi National Accelerator Laboratory **&** Fixed-Target Searches for New Physics with O(10 GeV) Proton Beams at Fermi National Accelerator Laboratory **&** FNAL Booster Storage Ring (18min)

- Themes and experiments:

LHCb (1), Belle II (2), Kaon experiments (3), Dark Matter at fixed target experiments (3), dark sectors at fixed target experiments (3), dark sectors at eta factories (1), MEGII (1), CBETA (1), neutron experiments (1), theory (4).

- In total, 51 LOIs were submitted to RF6.

Townhall meeting schedule (tentative)

Sheldon Stone	slstone@syr.edu	US LHCb Group	RF/SNOWMASS21-RF-EF-IF-CompF-001.p	8+2
	hearty@physics.ubc.ca	Dark sector studies at Belle II	RF/SNOWMASS21-RF6_RF0-028.pdf	8+2
Torben Ferber	torben.ferber@desy.de	Long-lived particles at Belle II	RF/SNOWMASS21-RF6_RF0_Torben_Ferb	8+2
		Dark sector searches at the CERN high-intensity kaon beam facility	RF/SNOWMASS21-RF6_RF0-011.pdf	8+2
Nanjo Hajime	nanjo@champ.hep.sci.osaka-u.ac	Dark Sector studies with KOTO	RF/SNOWMASS21-RF6_RF0_KOTO-050.p	8+2
		Probing the Dark Sector at Kaon Factories	RF/SNOWMASS21-RF6_RF0-034.pdf	8+2
Andrew Whitbeck	awhitbe1@fnal.gov	Light Dark Matter eXperiment	RF/SNOWMASS21-RF6_RF0-EF10_EF0-CF	10+2
Andrew Whitbeck	awhitbe1@fnal.gov	Muon Missing Momentum experiment	RF/SNOWMASS21-RF6_RF0-EF10_EF0-CF	together with 1
Marco Battaglieri	marco.battaglieri@ge.infn.it	Beam Dump eXperiments with electron beams	RF/SNOWMASS21-RF6_RF0_BDX-076.pdf	8+2
Luca Marsicano	luca.marsicano@ge.infn.it	Light dark matter searches with positrons	RF/SNOWMASS21-RF6_RF0_Luca_Marsic	8+2
Tim Nelson	tknelson@slac.stanford.edu	The Heavy Photon Search Experiment	RF/SNOWMASS21-RF6_RF0_Nelson-078.	8+2
Break				
Matt Toups	toups@fnal.gov	Fixed-Target Searches for New Physics with O(1 GeV) Proton Beams at Fermi	RF/SNOWMASS21-RF6_RF0-NF2_NF3-AF	15+3
Richard Van De Water	vdwater@lanl.gov	Fixed-Target Searches for New Physics with O(10 GeV) Proton Beams at Ferm	RF/SNOWMASS21-RF6_RF0-NF3_NF0-AF	together with 9
William Pellico	pellico@fnal.gov	FNAL Booster Storage Ring	RF/SNOWMASS21-RF6_RF0_pellico-029.p	together with 9
Nhan Tran	ntran@fnal.gov	DarkQuest and LongQuest at the 120 GeV Fermilab Main Injector	RF/SNOWMASS21-RF6_RF0_Nhan_Tran-(	8+2
Yu-Dai Tsai	ytsai@fnal.gov	Accelerator Probes of Millicharged Particles & Dark Matter	RF/SNOWMASS21-RF6_RF0-EF9_EF10-NF	8+2
	d.redigolo@gmail.com	The massless dark photon as a benchmark model	RF/SNOWMASS21-RF6_RF0-007.pdf	8+2
	alonidan@bu.edu	Photon-beam experiments and new light physics	RF/SNOWMASS21-RF6_RF0-112.pdf	8+2
Sean Tulin	stulin@yorku.ca	Searching for new light hidden particles with η and η′ mesons	RF/SNOWMASS21-RF6_RF2_Sean_Tulin-1	8+2
L. Calibbi	calibbi@nankai.edu.cn	physics potential with MEGII-fwd	RF/SNOWMASS21-RF5_RF6-006.pdf	8+2
Alakabha Datta	datta@phy.olemiss.edu	Light Mediators and Flavor Anomalies	RF/SNOWMASS21-RF6_RF1_Alakabha_D	8+2
Richard Milner	milner@mit.edu	Scientific Opportunities with the CBETA Accelerator	RF/SNOWMASS21-RF0_RF0-AF5_AF0_Ric	8+2
Josh Barrow	jbarrow3@vols.utk.edu	Searches for Transformations of Neutrons to Sterile Neutrons and Antineutrons	RF/SNOWMASS21-RF6_RF3_Joshua_Barr	8+2

Future meetings after CPM

- Theory meeting focused on

Benchmarks, new theory targets that can be fully/partially explored at existing and near-future experiments, novel cosmologies.

- Meeting with the accelerator frontier (AF5) to discuss facilities.