



Workshop on future muon EDM searches at Fermilab and **worldwide**

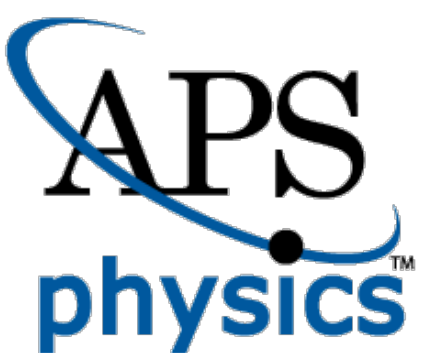
Welcome and Introduction

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This workshop is sponsored by

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What is this workshop about?

- From Moore Foundation and APS: *“Visitor Awards promote collaboration and exchange of ideas among researchers who may not otherwise have the opportunity to work closely together.”*
 - bring together expertise of Fermilab Muon g-2, tracking detectors (Liverpool, Mu3e), muon EDM (J-PARC, PSI) and muon EDM theorists
- A *working workshop* to investigate an upgrade plan discussed at Fermilab for a muon electric dipole moment search after 2020
 - not limited to Fermilab Muon g-2 community, new collaborators welcome!
- A mini-workshop on muon EDM searches worldwide
 - status update from J-PARC and a new initiative at PSI
 - consolidate physics case: theoretical motivations for the muon EDM search

Friday, October 12, 2018		
09:00	Introduction to this session (15')	Kim Siang Khaw (University of Washington) ▼
09:15	Updates from J-PARC Muon g-2/EDM (40')	Tsutomu Mibe (KEK) ▼
09:55	Combined explanations of (g−2) _{μ,e} and implications for a large muon EDM (40')	Andreas Crivellin (PSI) ▼
10:35	Coffee break (20')	
10:55	A model-independent analysis of the electron/muon EDM (40')	Emilie Passemar Martin Jung ▼
11:35	Muon EDM search at PSI using frozen spin technique (40')	Philipp Schmidt-Wellenburg (Paul Scherrer Institute) ▼
12:15	Lunch break (1h45')	
14:00	Theoretical motivations for a large muon EDM (1h30')	
15:30	Coffee break (20')	
15:50	Possible collaborations for the future muon EDM search at FNAL and frozen spin technique muon EDM search at PSI (1h10')	

An invitation to the theory community

	AC	RVV2	AKM	δ LL	FBMSSM	LHT	RS
$D^0 - \bar{D}^0$	★★★★	★	★	★	★	★★★★	?
ϵ_K	★	★★★★	★★★★	★	★	★★	★★★★
$S_{\psi\phi}$	★★★★	★★★★	★★★★	★	★	★★★★	★★★★
$S_{\phi K_S}$	★★★★	★★	★	★★★★	★★★★	★	?
$A_{CP}(B \rightarrow X_s \gamma)$	★	★	★	★★★★	★★★★	★	?
$A_{7,8}(B \rightarrow K^* \mu^+ \mu^-)$	★	★	★	★★★★	★★★★	★★	?
$A_9(B \rightarrow K^* \mu^+ \mu^-)$	★	★	★	★	★	★	?
$B \rightarrow K^{(*)} \nu \bar{\nu}$	★	★	★	★	★	★	★
$B_s \rightarrow \mu^+ \mu^-$	★★★★	★★★★	★★★★	★★★★	★★★★	★	★
$K^+ \rightarrow \pi^+ \nu \bar{\nu}$	★	★	★	★	★	★★★★	★★★★
$K_L \rightarrow \pi^0 \nu \bar{\nu}$	★	★	★	★	★	★★★★	★★★★
$\mu \rightarrow e \gamma$	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★
$\tau \rightarrow \mu \gamma$	★★★★	★★★★	★	★★★★	★★★★	★★★★	★★★★
$\mu + N \rightarrow e + N$	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★
d_n	★★★★	★★★★	★★★★	★★	★★★★	★	★★★★
d_e	★★★★	★★★★	★★	★	★★★★	★	★★★★
$(g-2)_\mu$	★★★★	★★★★	★★	★★★★	★★★★	★	?

Table 8: “DNA” of flavour physics effects for the most interesting observables in a selection of SUSY and non-SUSY models ★★★★★ signals large effects, ★★ visible but small effects and ★ implies that the given model does not predict sizable effects in that observable.