



# Weighing the Axion with Muon Haloscopy

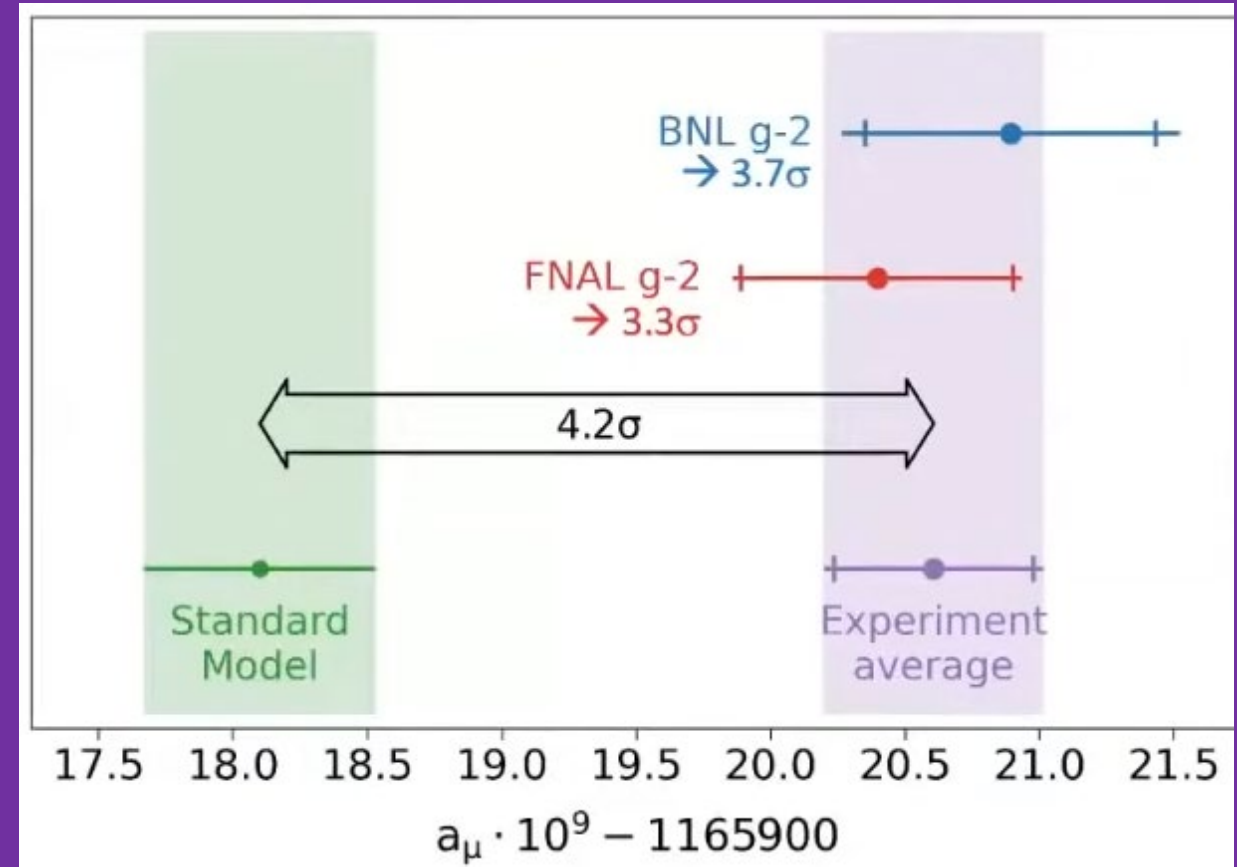
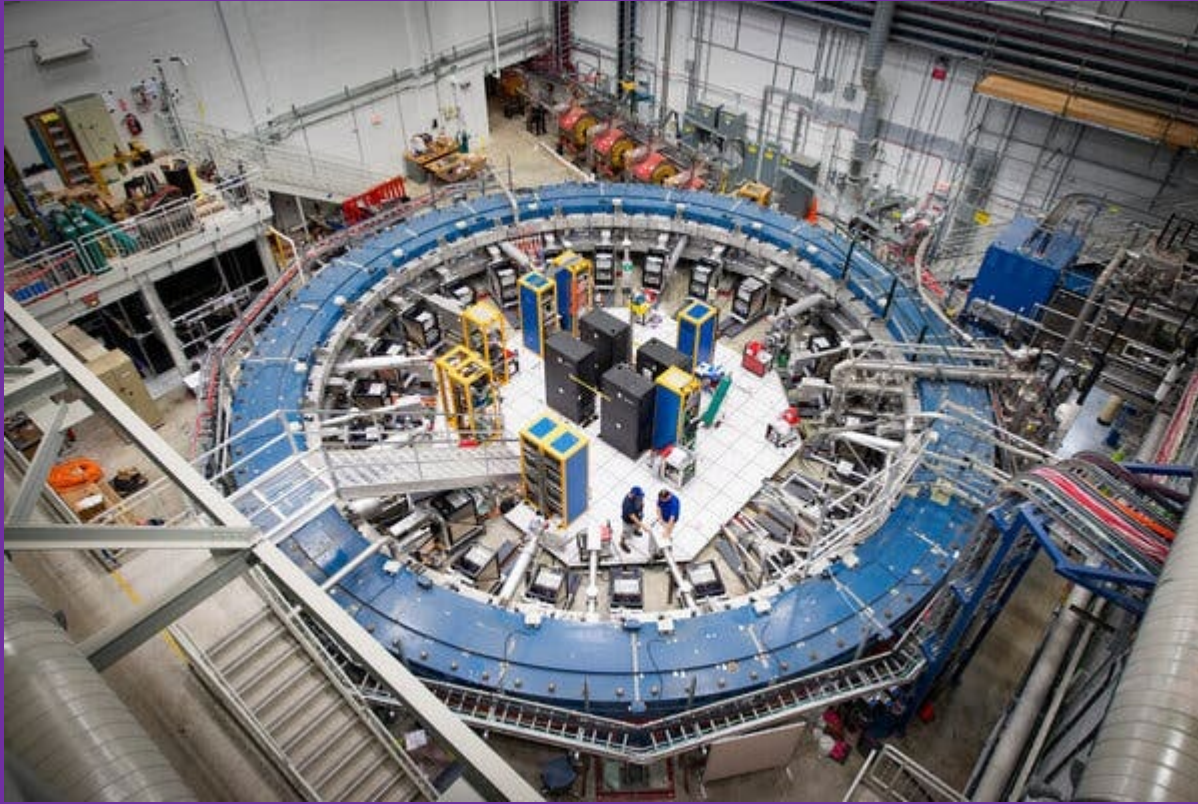


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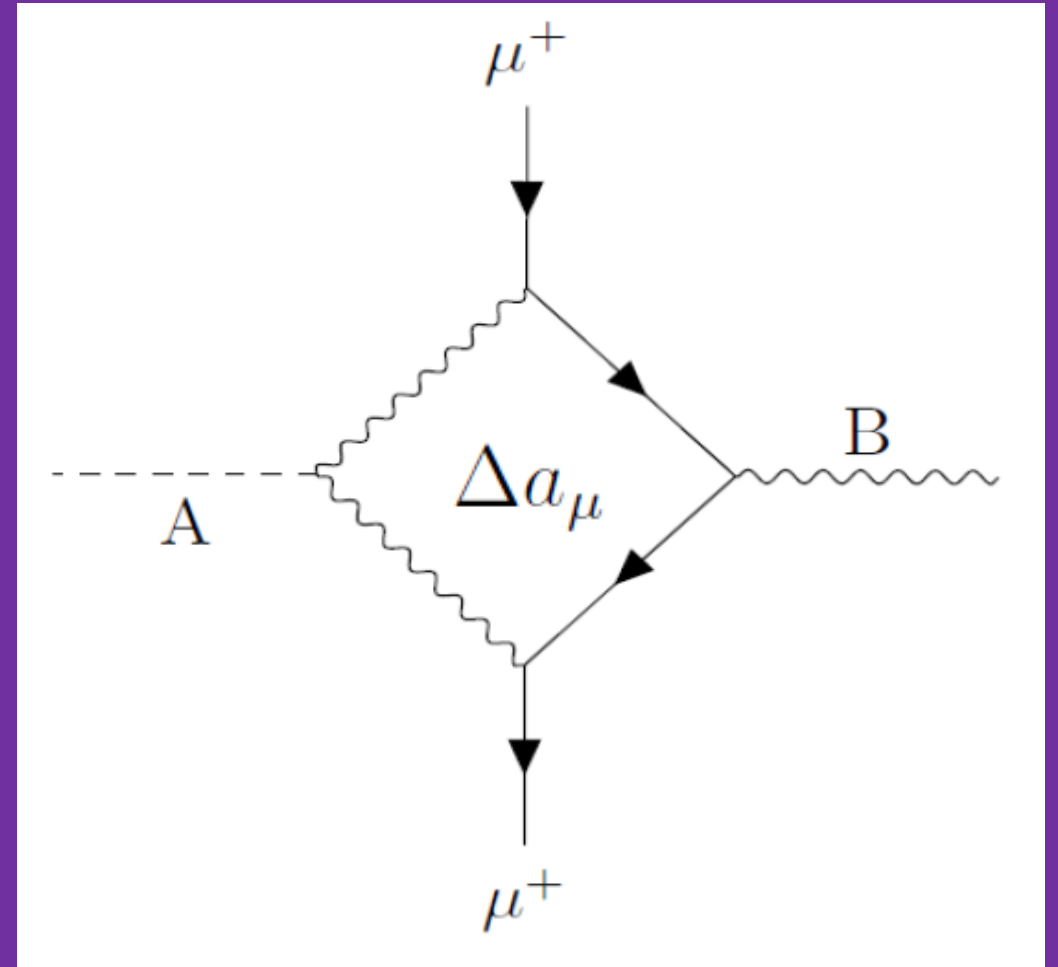
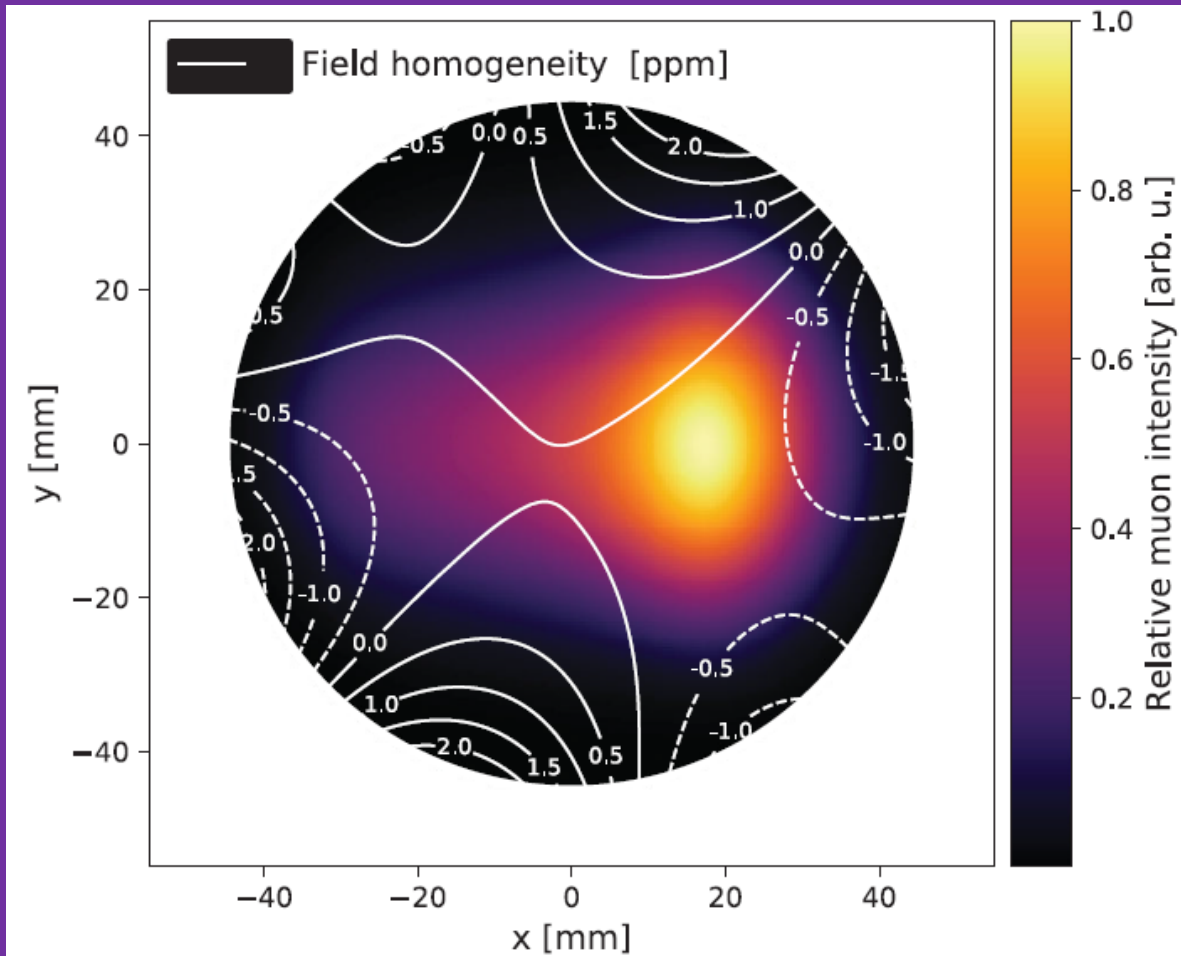
**Noah Bray-Ali** 3 August 2022 **INT-22-2B Short Talk**



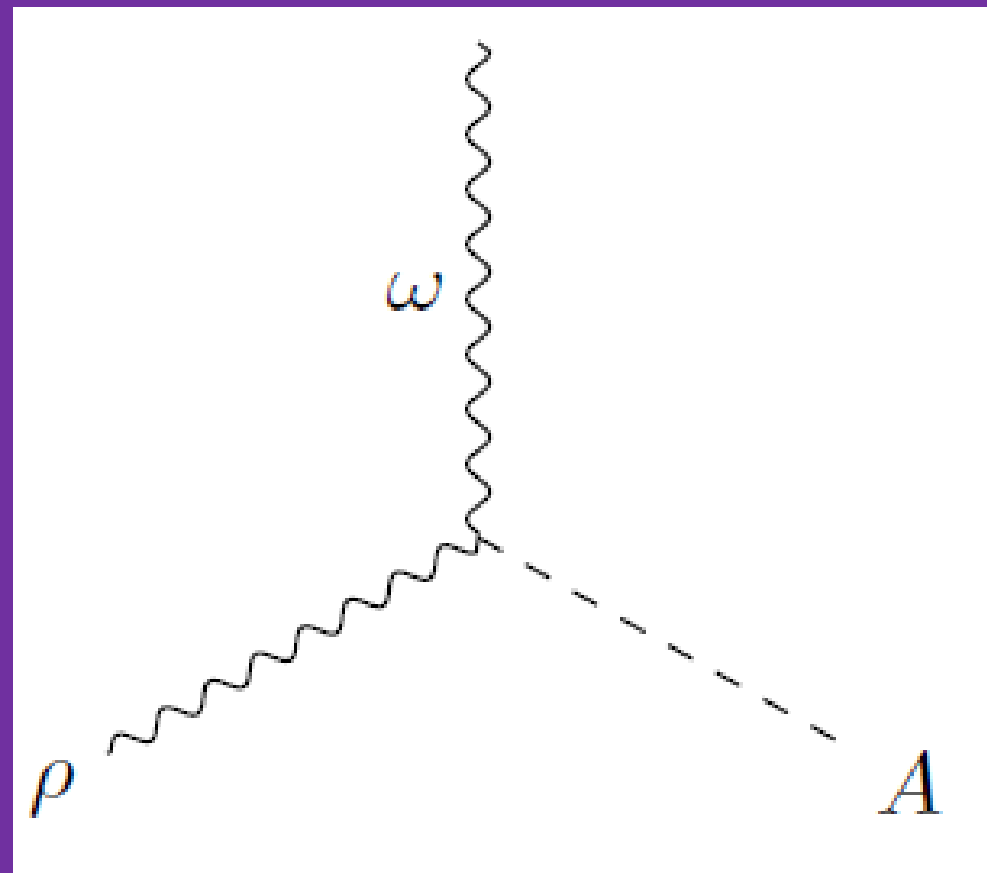
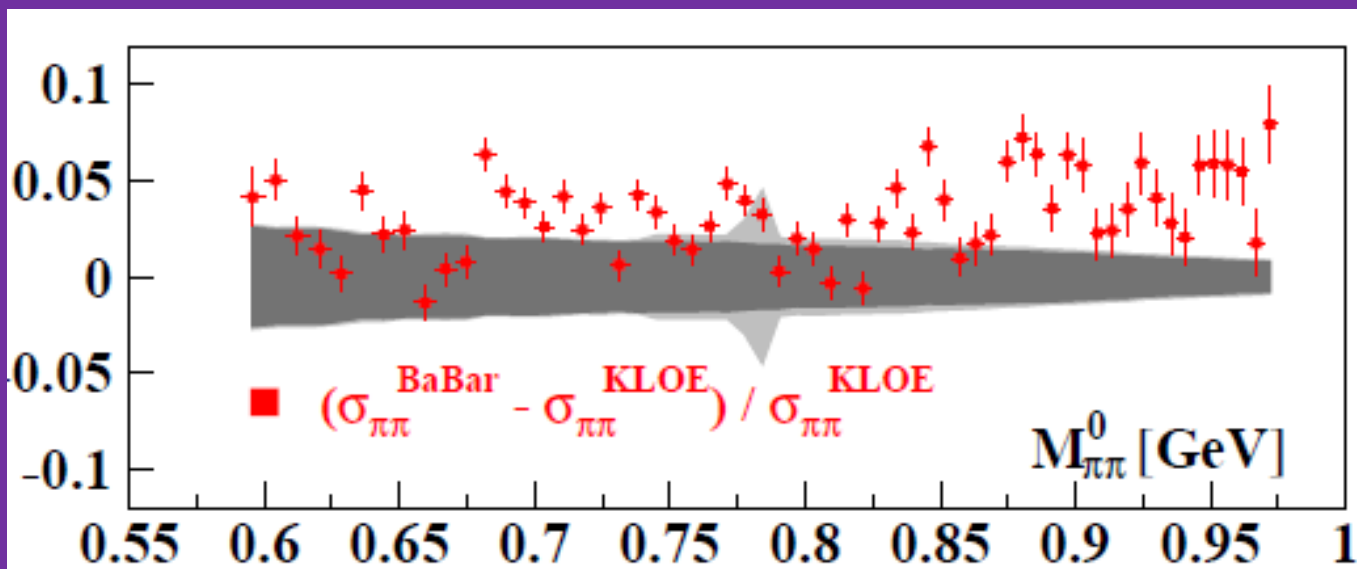
# Muon Magnetic Moment B. Abi *et al.* (Muon g-2), Phys. Rev. Lett. **126**, 1481 (2021)



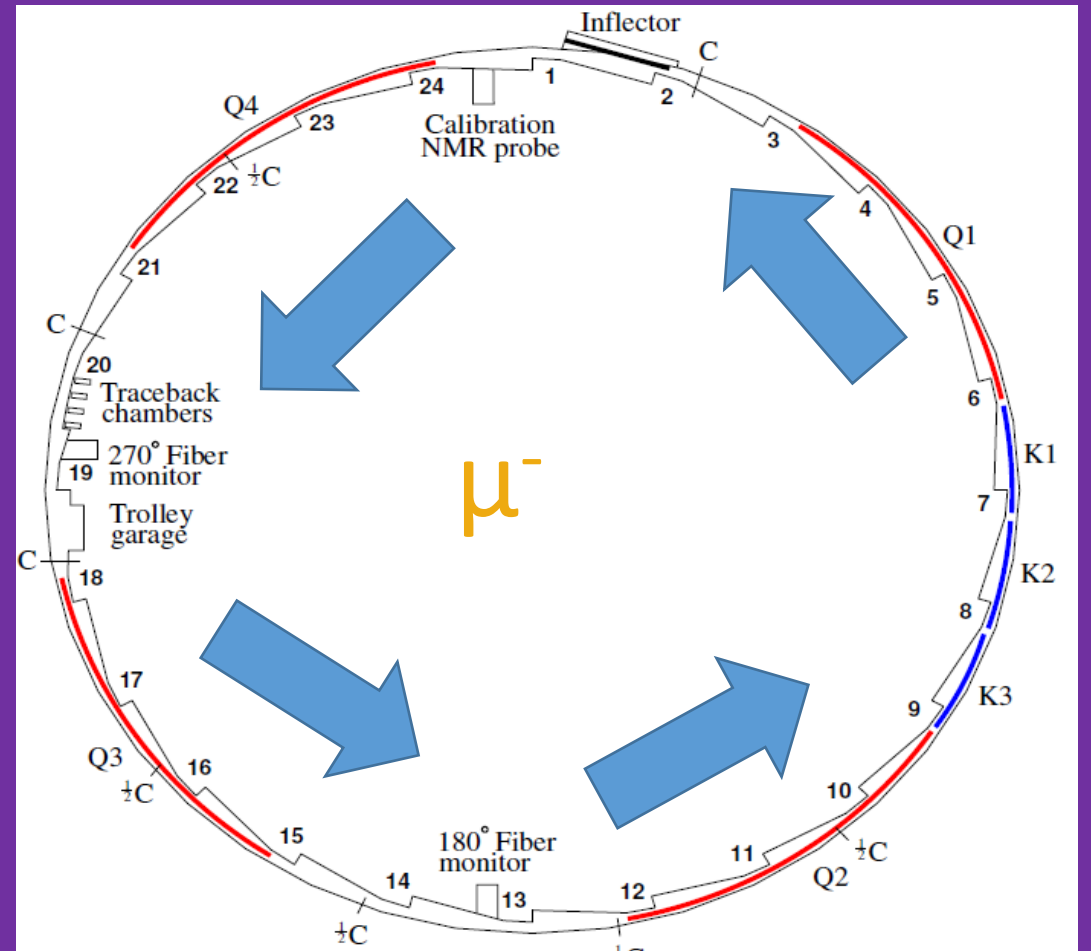
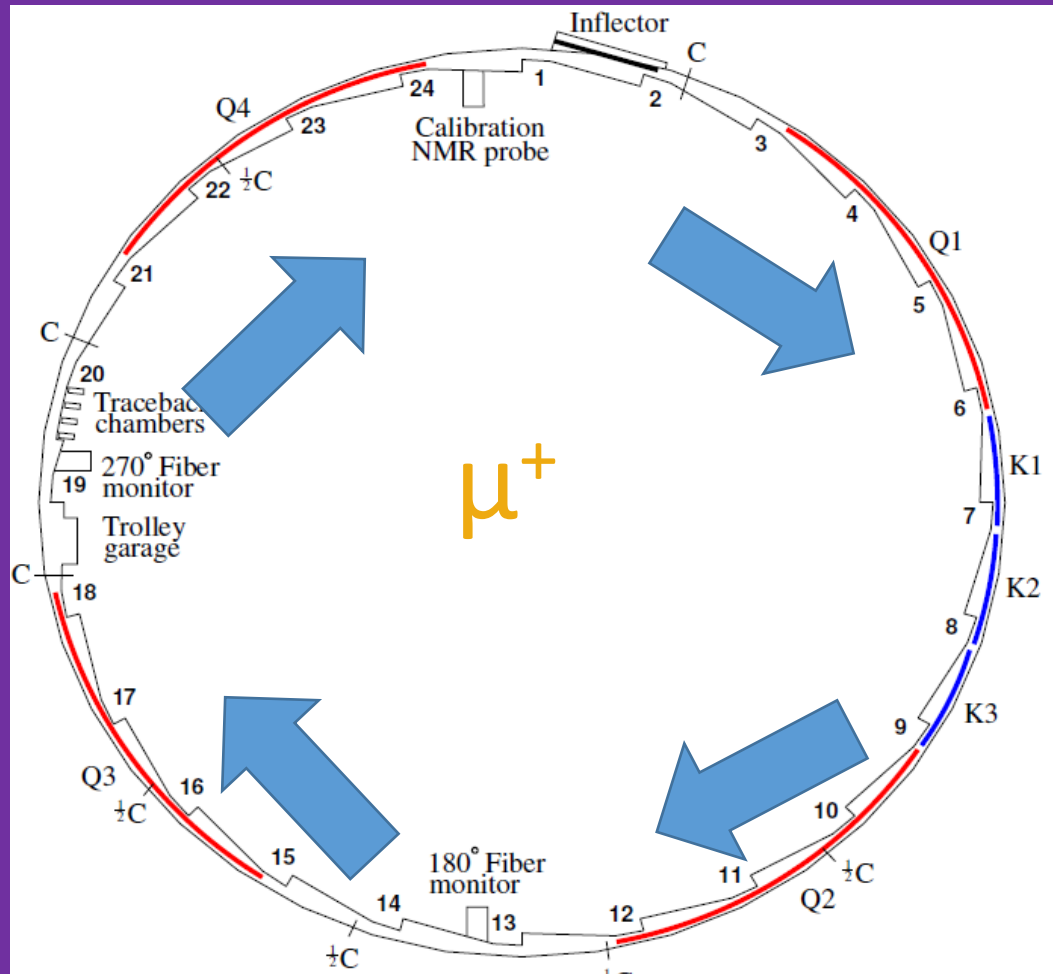
Muon Haloscopy I B. Abi *et al.* (Muon g-2), Phys. Rev. Lett. **126**, 1481 (2021)



Muon Haloscopy II P. Lukin *et al.* (KLOE) *Phys. Lett. B* **720**, 336 (2012)

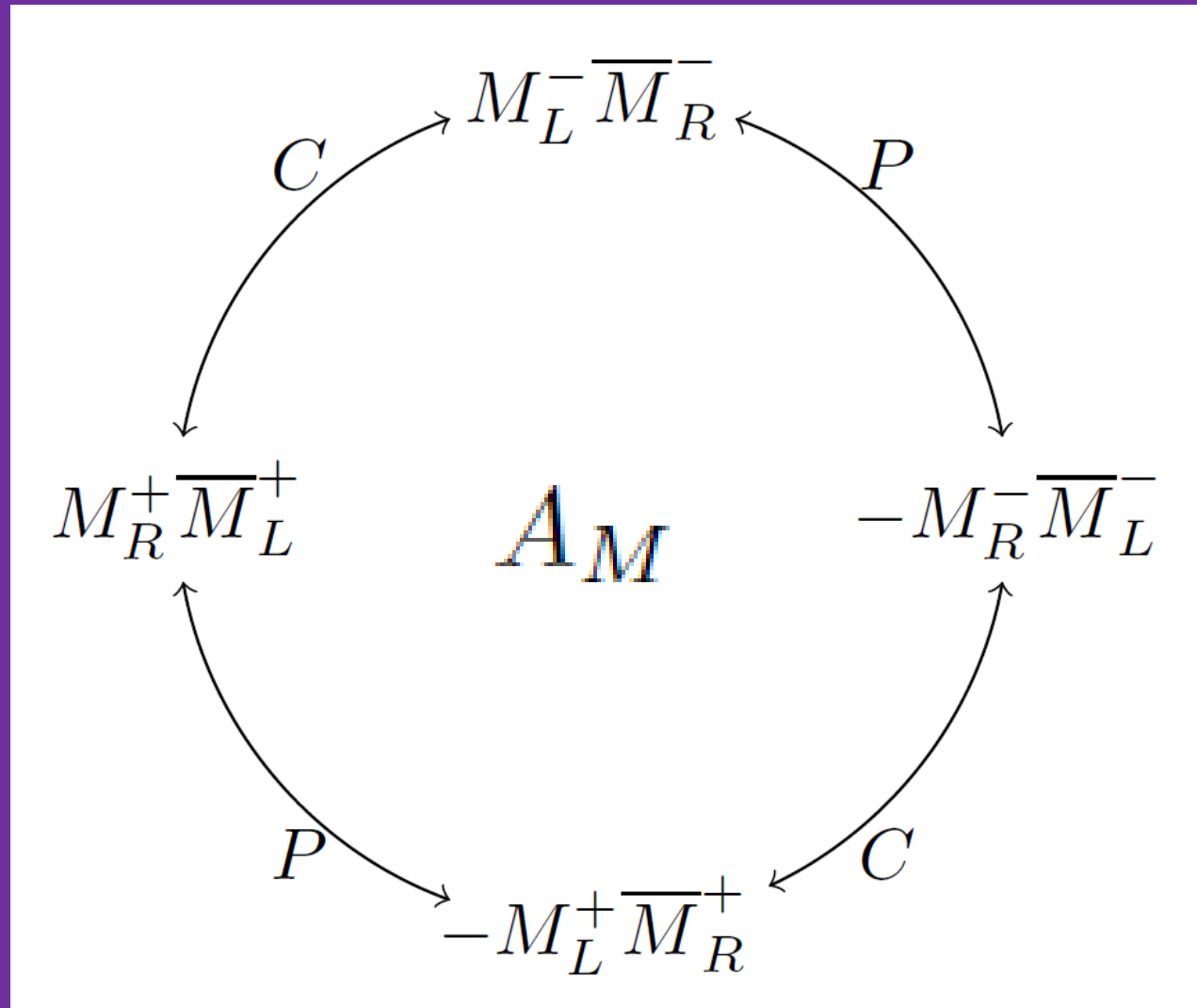


Five Sigma in One Month at Fermilab N. Bray-Ali (2021) arxiv.org: 2108.12243[hep-ph]



Axions and the Standard Model F. Wilczek *Lightness of Being* (2008) pg. 165.

	R	W	B	G	P
u	+	-	-	+	-
u	-	+	-	+	-
u	-	-	+	+	-
d	+	-	-	-	+
d	-	+	-	-	+
d	-	-	+	-	+
$u^c$	-	+	+	-	-
$u^c$	+	-	+	-	-
$u^c$	+	+	-	-	-
$d^c$	-	+	+	+	+
$d^c$	+	-	+	+	+
$d^c$	+	+	-	+	+
$\nu$	+	+	+	+	-
e	+	+	+	-	+
$e^c$	-	-	-	+	+
N	-	-	-	-	-





Infrared Haloscopy T. M. Ito *et al.* (LANL nEDM) NSF Proposal 1828512 (2018), Fig. 4

