

Open Discussion The Future of Kaon Physics

Workshop “Aiming for new heights with kaon”

Kohsaku Tobioka (Tobi), 3/31/2022

III. Relevant New Physics

- Light NP (unique for Ks)
Eg. light NP [Diego's talk]
K0 → X1 X2 violating GN bound.
How about for Hyperon?
- Heavy NP [Joachim Brod's talk]
- BSM unique for Hyperon? [Brod's talk]
Axial current?
Dark baryon, asymmetric dark matter.
- Leptoquark? [Avital's talk]
- Majorana neutrino mass
[Andrzej Buras's comment]
- more ideas?
- ...

IV. Exp challenges, more ideas&channels

- Synergy with HLLHC (high granularity)
- KS, hyperon at future LHCb?
- Other than $K \rightarrow \mu + \mu^-$?
- p pbar collision at rest for mixed Ks/KL
[Augusto's comment]

Measure $K_S \rightarrow \pi^0 | + |^-$ precisely (1%? muon is better)

Improve $K_L \rightarrow \pi^0 | + |^-$

LHCb can contribute to K_S