

# Lepton flavor violation and lepton universality violation in meson and baryon decays

Snowmass 2021 – RF01 / RF05

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# LFV and LUV in meson and baryon decays

Today's workshop will discuss LFV and LUV in meson and baryon decays.

Excellent opportunity to further explore synergies and increase interactions between our topical groups, and to start coordinating our efforts for Snowmass:

- List of topics of interest - are we missing something?
- Studies to be conducted
- Highlight complementarity between LFV and LUV
- Convey the importance of LFV / LUV searches within the community
- ...

# LFV and LUV in meson and baryon decays

Monday 28th

8:00 AM → 8:05 AM **Welcome**

8:05 AM → 8:45 AM **Theory overview (30'+10')**

Speaker: Diego Guadagnoli (LAPTh-CNRS)

8:45 AM → 9:20 AM **LFV+LFU in neutral-current b/c decays at LHCb (25'+10')**

Speaker: Flavio Archilli (University of Heidelberg)

9:20 AM → 9:35 AM

**Break**

9:35 AM → 10:10 AM **LFV+LFU in neutral-current b/c decays at Belle II (25'+10')**

Speaker: Karim Trabelsi (IJCLab Orsay)

10:10 AM → 10:35 AM **LFV+LFU at Atlas+CMS (20'+5')**

Speaker: Alessandro Cerri (University of Sussex)

10:35 AM → 11:00 AM **LFV+LFU at FCC-ee (20'+5')**

Speaker: Marcin Chrzęszcz (Henryk Niewodniczanski Institute of Nuclear Physics)

11:00 AM → 11:25 AM **Addressing  $R_D(^*)$ ,  $R_K(^*)$ , muon  $g-2$  and ANITA anomalies in a minimal R-parity violating supersymmetric framework (20'+5')**

Speaker: Bhupal Dev (Washington University in St Louis)

# LFV and LUV in meson and baryon decays

Tuesday 29th

**8:00 AM** → 8:25 AM **Theory of LFU/LFV in charm decays / dineutrino modes (20'+5')**

Speaker: Hector Gisbert Mullor (TU Dortmund)

**8:25 AM** → 8:50 AM **LFV at BESIII and STCF (20'+5')**

Speaker: Dayong Wang (Peking University)

**8:50 AM** → 9:15 AM **LFV at NA62 (20'+5')**

Speaker: Joel Swallow (University of Birmingham)

**9:15 AM** → 9:30 AM

Break

**9:30 AM** → 9:55 AM **LFU in charged-current b decays at Belle II (20'+5')**

Speaker: Florian Bernlochner (University of Bonn)

**9:55 AM** → 10:20 AM **LFU in charged-current b decays at LHCb (20'+5')**

Speaker: Manuel Franco Sevilla (University of Maryland (US))

**10:20 AM** → 10:45 AM **Novel observables for  $b \rightarrow c$  tau nu decays (20'+5')**

Speaker: Alakabha Datta (University of Mississippi)

**10:45 AM** → 11:15 AM **Final open discussion**

## Rare Processes and Precision Measurements Frontier

**October 2, 2020** – Town Hall meeting (<https://indico.fnal.gov/event/45713/>)

**October 5-8, 2020** – Cross-frontier Community Planning Meeting  
(<https://indico.fnal.gov/event/44870/>)

*October 7, 2020* – Parallel session on “Anomalies in Flavor Physics”  
(<https://indico.fnal.gov/event/44870/sessions/16238/#20201007>)

*October 7, 2020* – Parallel session on “New accelerator concepts for high intensity muon beams”  
(<https://indico.fnal.gov/event/44870/sessions/16236/#20201007>)

***Please register on indico***

# Future events

## RF1

Series of workshops on b and c physics

The schedule will be posted on the topical group page:

<https://snowmass21.org/rare/weakbc>

**Next event:** probably a workshop on  $V_{ub}/V_{cb}$  jointly with TF on w/c **Nov 16**

## RF5

Series of workshop to discuss various aspects of CLFV.

The schedule (including past events) can be found on the CLFV topical group page: <https://snowmass21.org/rare/clfv>

**Next event:** CLFV with high intensity muon factory (date TBD)

# Today's workshop

The meeting will be recorded, and it seems that the file size depends on how many people share their video. We would appreciate if everybody but the speaker could turn off the video feed to limit file size.

Please raise hands to ask questions, we have allotted some time for discussion at the end of each talk.

Feel free to use the chat to communicate in the meantime, and repost important questions / comments to our slack channel.

**Enjoy the workshop**