

CLFV in Heavy State Decays

Snowmass 2021 – RF05 / EF02 / EF09

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Letter of intent

Our thanks to all those who have submitted a letter(s) of intent, we appreciate the time and energy you devoted to writing these.

We have received about 25 contributions discussing CLFV in muon decay and transitions, tau decays, search for new physics in CLFV processes as well as new facilities and experimental concepts.

We are now working on sorting these LOI, preparing the CPM meeting and organizing the Snowmass studies.

The list of LOI can be found on the Snowmass website: <https://snowmass21.org/loi>

CLFV in heavy state decays

Today's workshop will discuss CLFV in heavy state decay, in collaboration with EF02 (Higgs Boson as a portal to new physics) and EF09 (BSM: More general explorations).

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

- List of topics of interest - are we missing something?
- Studies to be conducted (benchmark models, EFT,...)
- Highlight complementarity between low- and high-energy probes
- Convey the importance of CLFV searches in heavy states (and in general) within the community
- ...

CLFV – Heavy state decays

10:00 AM	→ 10:10 AM	Welcome Speaker: Bertrand Echenard (Caltech)	🕒 10m
10:10 AM	→ 10:40 AM	(Theoretical) Introduction to heavy state LFV decays Speaker: Wolfgang Altmannshofer (UC Santa Cruz)	🕒 30m
10:40 AM	→ 11:10 AM	Experimental review of Higgs LFV decays Speaker: Cecile Caillol	🕒 30m
11:10 AM	→ 11:40 AM	Experimental review of Z,W,t LFV decays Speaker: Stefania Xella (Niels Bohr Institute, Denmark)	🕒 30m
11:40 AM	→ 12:00 PM	Coffee break	🕒 20m
12:00 PM	→ 12:30 PM	Theory of LFV in exotic decays Speaker: Yongchao Zhang	🕒 30m
12:30 PM	→ 1:00 PM	Experimental review of LFV in exotic decays Speaker: Dr Mukherjee Swagata (RWTH Aachen)	🕒 30m
1:00 PM	→ 1:30 PM	Open discussion	🕒 30m

CLFV workshops

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

Next workshops

- July 2: Muon transitions and decays, muonium-antimuonium
- July 23: Tau decays, electron-tau transitions
- **September 3: Heavy states decays (with EF02 / EF09)**
- September 28-29: LFV and LUV in meson and baryon decays with RF01/02
- TBA: CLFV with high intensity muon factory

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