CLFV in heavy state decays

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Snowmass
CLFV White Paper Discussion
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Contributors

Confirmed:

- Wolfgang Altmannshofer, UC Santa Cruz
  - *"Introduction to Heavy State LFV Decays"* , Sep. 3rd, 2020 Meeting
- Yougchao Zhang, Washington Univ, St. Louis
  - "Theory of LFV in exotic decays", Sep. 3rd, 2020 Meeting
- Stefania Xella, Niels Bohr Institute, Copenhagen
  - "LFV / LNV", Sep. 3rd, 2020 Meeting
- Editor: MD, Niels Bohr Institute, Copenhagen
  - "*Charged Lepton Flavour Violations at the FCC-ee*", Oct. 2nd, 2020, Townhall Meeting

Potential:

- Swagata Mukerjee, Aachen Univ, Germany
  - "*Search for charged LFV (at LHC)*", Sep. 3rd, 2020 Meeting
- Cécile Caillol, Univ of Winconsin-Madison
  - *"Experimental overview of Higgs LFV decays"*, Sep. 3rd, 2020 Meeting

Channels to include

- Obvious
  - Z → e+μ, e+τ, μ+τ
  - H → e+μ, e+τ, μ+τ
  - t → c+e+μ etc
  - Z' → e+μ, e+τ, μ+τ (where Z' could as well be RPV SUSY, QBH,…)

- Perhaps less obvious (HNL and similar). Covered elsewhere ?
  - Z → ν+N, with N → ℓ+W → ℓ+q+q or N → ℓ_1+W → ℓ_1+ℓ_2+ν_2
  - W → ℓ+N, with N decaying as above

Material (experimental) vs. Facility

	LHC + HL	FCC-ee	FCC-hh
Z	✓	✓	?
H	✓	(✓)	?
top	(✓)	?	?
Z′	✓	✗	?

✓ - exists, presented at Snowmass
✗ - N/A
? - not sure