

New Scientific Opportunities with the TRIUMF ARIEL e-linac



Contribution ID: 18

Type: not specified

New opportunities for the study of baryon-number violation with low-energy electron accelerators

Thursday, May 26, 2022 1:45 PM (30 minutes)

The severity of the experimental limits on proton decay does not preclude the appearance of processes that break baryon number by two units at an appreciable rate, and their experimental signatures in low-energy experiments are so striking as to be “background free.” I will consider the connections between various such processes and their implications, noting, e.g., that the observation of $e^-p \rightarrow e^+\bar{p}$, along with that of $n\bar{n}$ oscillations, would point to the existence of neutrinoless double β decay – and thus to that of a Majorana neutrino.

Working within the context of minimal scalar models that permit no proton decay, I consider not only the experimental constraints on such new degrees of freedom but also event rates for baryon- and lepton-number violating processes at future accelerator facilities such as Ariel.

Attendance

Contact Email

Scheduling Constraints

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