



Contribution ID: 914

Type: **Poster**

Rare Leptonic Decays at Belle II

Thursday 15 December 2022 18:45 (15 minutes)

The Belle II Experiment is a high-energy collision experiment located in Japan, aiming to record the largest dataset of B-mesons ever produced.

B-mesons provide a unique laboratory to explore phenomena both within and beyond the Standard Model, such as quark-mixing, flavour oscillation and charge-parity violation.

Searches for leptonically decaying B mesons can provide a method of measuring these phenomena.

The rarity of these leptonic B-decays, as well as their potential for incomplete energy signatures via a non-interacting neutrino call for novel techniques to ascertain their existence.

This poster will summarise the efforts within the Belle II Experiment to identify missing energy leptonic B-decays, performed with semileptonic B-tagging via the Full Event Interpretation machine learning technique.

An exploration of selection criteria to enhance signal to background ratios in key variables of interest will be presented, as well as an estimate on the number of events we could expect the Belle II Experiment to identify in its 2019-2022 dataset.

Presenter: DE LA MOTTE, Shanette (The University of Adelaide)

Session Classification: Poster session