



UNIVERSITY OF MIAMI  
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### Rare Decays at LHCb: News and Future Possibilities

#### Abstract

The rare decays program of the LHCb experiment has led to significant insights into the Standard Model of particle physics. The first part of this talk will discuss a selection of important results including most recent measurements and their implications on the field and our understanding of the Standard Model. In the last long shutdown between 2019 and 2021, the LHCb detector was upgraded in order to cope with the increase in luminosity provided by the LHC. Within 2024 alone, LHCb has recorded more data than in the six year corresponding to the first six years of data taking before the upgrade. The increase in data is particularly crucial for the study of rare decays. In addition, this and future upgrades improve the quality of the collected data with strong implications for the rare decays program which will be explored in the second part of this talk.