

Abstract Submitted
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Variations to the Z-expansion of the Form Factors of the Decay of B Mesons¹ DANIEL SIMONS, ERIK GUSTAFSON, YANNICK MEURICE, The University of Iowa — We studied the decay rate of the particle decay $B \rightarrow Dl\nu_l$ using data collected from the Belle Collaboration. In order to analyze this decay rate, two different form factor parametrizations of the decay rate were used, the CLN (Caprini, Lellouch, and Neubert) parametrization and the BGL (Boyd, Grinstein, and Lebed) parametrization. These form factors are functions of the hadronic recoil variable w and contain free parameters which are the interest of this project. One of the goals of this project was to fit these form factors to the Belle data in the lattice regime, considering only the data points where $w < \sim 1.3$, so that we can predict what the larger w region should look like. We hope to in the future be able to use Monte Carlo simulations to extract values of the form factors, however these simulations are only able to reliably extract these values inside of the lattice regime. By fitting only the low w values, we are able to get an idea of what the larger w region should look like and how many data points are needed in the fit to accurately predict the larger w region. Our recent progress extends this idea to the more complex particle decay $B \rightarrow D^*l\nu_l$ and we look at incorporating the Z-expansion into public event generators.

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