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Title:	Search for $Z' \rightarrow \mu + \mu -$ in the $L \mu - L \tau$ gauge-symmetric model at Belle
Authors:	Bhardwaj, Vishal (/jspui/browse?type=author&value=Bhardwaj%2C+Vishal) Patra, Sourav (/jspui/browse?type=author&value=Patra%2C+Sourav)
Keywords:	gauge-symmetric $Z' \rightarrow \mu + \mu -$
Issue Date:	2022
Publisher:	American Physical Society
Citation:	Physical Review D, 106(1), 12003.
Abstract:	We search for a new gauge boson Z' that couples only to heavy leptons and their corresponding neutrinos in the process $e + e - \rightarrow Z' (\rightarrow \mu + \mu -) \mu + \mu -$, using a 643 fb^{-1} data sample collected by the Belle experiment at or near the $Y(1S, 2S, 3S, 4S, 5S)$ resonances at the KEKB collider. While previous searches for Z' performed a data-based estimation of the initial state radiation effect, our search for the Z' is the first to include effects due to initial state radiation in the signal simulated samples that were used in estimating the detection efficiency. No signal is observed in the Z' mass range of $0.212 - 10 \text{ GeV}/c^2$, and we set an upper limit on the coupling strength, g' , constraining the possible Z' contribution to the anomalous magnetic dipole moment of the muon.
Description:	Only IISER Mohali authors are available in the record.
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