Abstract Submitted
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Search for $B^0 \to l^+l^-$ at Belle KIMBERLY WILLIAMS, Virginia Tech, BELLE COLLABORATION — The decay modes $B^0 \to l^+l^-$ where l is either an electron of a muon are a group of very rare particle decays presenting an important test of physics beyond the Standard Model. SM predictions for the branching ratios are vanishingly small. So, observation of such decays would be a clear signal of new physics such as extra Higgs doublets (for $B \to e^+e^-$ or $B \to \mu^+\mu^-$) or lepton-nonconserving interactions (for $B \to e^\pm\mu^\pm$). Based on a sample of $(771.581 \pm 10.566) \times 10^6$ $B\bar{B}$ pairs collected by the Belle experiment at $\sqrt{s} = 10.58GeV$, we present a study of the rare decay $B^0 \to l^+l^-$.

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