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Study of $B_{s,d} \to \ell^+\ell^- (\ell = e, \mu, \tau)$ rare decays in Z' model

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Abstract: We discuss the rare decays $B_{s,d} \to \ell^+\ell^- \left(\ell = e, \mu, \tau\right)$ decays in a non-universal Z' model derived from extension of the standard model (SM).Considering the effect of Z'-mediated flavor changing neutral current (FCNC) we calculate the branching ratiofor $B_{s,d} \to \ell^+\ell^-$ decay processes. We compare the obtained results with predictions of the SM and discuss the sensitivity of theZ' boson mediated FCNCs in such rare decays.We find the branching ratios in Z' model scenario deviates from SM predictions. These discriminations between Z' boson effects and SM results provides clue for the presence of new physics (NP) beyond the scope of the SM.

Keywords : B mesons, Z' boson, Models beyond the standard model

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[Full Paper]