

“Impact of leptoquarks in semileptonic B decays”

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Thank you for the valuable questions and comments.

Reply to the Questions and Comments

1. As per the the suggestion of the Referee, we have corrected all the sentences in the manuscript.
2. We have given suitable reference for the existence leptoquarks in various beyond the standard model scenarios such as Grand unified theories, Pati-Salam model, technicolor models and the composite models.
3. The constraints on the LQ parameters are obtained from the processes $B_s \rightarrow l^+l^-$ and $\bar{B} \rightarrow X_s l^+l^-$. By comparing the measured branching ratios of these processes with their corresponding SM predictions, one can obtain the bound on the new Wilson coefficients $C_{9,10}^{\text{NP}}$, which are related to the LQ couplings as $(h_{3L}^{2i} h_{3L}^{3i*} / M_{\text{LQ}}^2)$. So actually one gets the bound on the combination of LQ parameters $(h_{3L}^{2i} h_{3L}^{3i*} / M_{\text{LQ}}^2)$. In Table I, we have provided the numerical results for the real and imaginary parts of the LQ couplings $h_{3L}^{2i} h_{3L}^{3i*}$ for a representative LQ mass value $M_{\text{LQ}}=1$ TeV. For higher LQ mass these couplings will be appropriately scaled, but the final result will not be affected due to this.