

## $B_s - \bar{B}_s$ mixing and $b \rightarrow s$ transitions in isosinglet down quark model

The recent observation of the mass difference in  $B_s$  system seems to be not in complete agreement with the corresponding standard model value. We consider the model with an extra vector like down quark to explain this discrepancy and obtain the constraints on the new physics parameters. Thereafter, we show that with these new constraints, this model can successfully explain other observed deviations associated with  $b \rightarrow s$  transitions, namely,  $B_s \rightarrow \psi \phi$ ,  $B \rightarrow K \pi$  and  $B \rightarrow \phi K_s$ .

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