

Abstract

We study the s-channel single top quark production at the LHC in the context of extra dimension theories, including the Kaluza-Klein (KK) decomposition. It is shown that the presence of the first KK excitation of W gauge boson can reduce the total cross section of s-channel single top production considerably if $M_{W_{KK}} \sim 2.2 \sim 3.5 \text{ TeV}$ for $7 \sim 14 \text{ TeV}$ proton-proton collisions. Then the results will be compared with the impacts of other beyond Standard Model (SM) theories on the cross section of single top s-channel. The possibility of distinguishing different models via their effects on the production cross section of the s-channel is discussed.