

## Tau Leptonic Decay $\tau \rightarrow l \bar{\nu}_l \nu_\tau$ in Littlest Higgs Model

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Abstract: We consider the  $\tau$  leptonic decay  $\tau \rightarrow l \bar{\nu}_l \nu_\tau$  in the framework of the littlest Higgs (LH) model and calculate the corrections of new particles to this decay. We find that the contributions of the charged scalars can be safely ignored and the LH model is in perfect agreement with the universality of the couplings of the SU gauge bosons to the leptonic charged currents. The corrections of the LH model to the  $\tau$  leptonic decay  $\tau \rightarrow l \bar{\nu}_l \nu_\tau$  are not sensitive to the parameter  $c$ , but depend strongly on the parameters  $f$  and  $x$ . The precision measured data about the  $\tau$  leptonic decay demand that the parameter  $f$  approximately equal 3.5 TeV and  $x > 0.1$ , while agree with the general expectation based on other phenomenological explorations.

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Key words: tau leptonic decay, littlest Higgs model, corrections

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