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A three-loop neutrino model with global  $U(1)$  symmetry. (English) Zbl 1328.81237

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Summary: We study a three-loop induced neutrino model with a global  $U(1)$  symmetry at TeV scale, in which we naturally accommodate a bosonic dark matter candidate. We discuss the allowed regions of masses and quartic couplings for charged scalar bosons as well as the dark matter mass on the analogy of the original Zee-Babu model, and show the difference between them. We also discuss that the possibility of the collider searches in a future like-sign electron liner collider could be promising.

**MSC:**

[81V15](#) Weak interaction in quantum theory

[81T18](#) Feynman diagrams

[83F05](#) Relativistic cosmology

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**Keywords:**

[Zee-Babu model](#)

**Software:**

[FeynRules](#)

**Full Text:** [DOI](#)

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