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## Equivalence of two component spinor mechanism and four component spinor mechanism in top quark pair production

In this article, we calculate the S-matrix elements for the process  $e^+e^- \rightarrow t\bar{t}$  mediated by Standard Model photon, Z boson and an additional Z' boson indicating the contribution from new physics. We calculate the amplitude square using two component spinor formalism and four component spinor formalism and show the equivalance of the results using the two formalisms. We also establish the relations between the couplings of Z' boson to fermions in the two component spinor formalism and four component spinor formalism.

## **Field of contribution**

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