

Double Higgs Production at the Linear Colliders and the Probing of the Higgs Self-Coupling

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Abstract

We study double Higgs production in the e^+e^- and $\gamma\gamma$ modes of the linear collider. It is also shown how one can probe the scalar potential in these reactions. We discuss the effective longitudinal W approximation in $\gamma\gamma$ processes and the $W_L W_L$ luminosities in the two modes of a high-energy linear collider. A generalised non-linear gauge-fixing condition, which is particularly useful for tree-level calculations of electroweak processes for the laser induced collider, is presented. Its connection with the background-field approach to gauge fixing is given.

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