

Spin Correlations in Top Quark Pair Production Near Threshold at the e^+e^- Linear Collider

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Abstract: We investigate the spin correlations in top quark pair production near the threshold at the e^+e^- linear collider. Comparing with the results above the threshold region, we find that near the threshold region the off-diagonal basis, the optimized decomposition of the top quark spins above the threshold region, does not exist, and the beamline basis is the optimal basis, in which there are the dominant spin components: the up-down (UD) component for $e_L^-e^+$ scattering and the down-up (DU) component for $e_R^-e^+$ scattering can make up more than 50% of the total cross section, respectively.

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Key words: top quark, spin correlations, threshold

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