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Single Production of Charged Top-Pions at High Energy Linear e^+e^- Colliders

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Abstract: The dominant decay modes of charged top-pions ($\pi_t^{\pm}$) are $t\bar{b}$ or $\bar{t}b$. We consider the single production of charged top-pions in association with a top quark via e^+e^- annihilation and calculate the production cross section of the processes $e^+e^-\to\bar{t}b\pi^+(t\bar{b}\pi^-)$ at the leading order. We find that it can reach 1.2 fb with reasonable parameter values. The charged top-pions may be detected via the channel $tb\pi^{\pm}$ in the future high energy e^+e^- colliders.

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