**Quantum Suppression of Beamstrahlung for Future Linear Colliders***, MING XIE, LBNL - Beamstrahlung at the Interaction Point (IP) may present severe limitations on linear collider performance. The approach to curtail this effect for all current designs at around 0.5 TeV will become more difficult technically and less effective at higher energy. Recently, high energy physics community has been emphasizing the importance of higher energy reach for a linear collider. It is now becoming increasingly important to search for new approaches for the IP. In this paper, we present our exploration of an effect known as quantum suppression of beamstrahlung and examine the possibilities of utilizing the effect as an IP approach for future linear colliders. Through scaling laws, we show that it is becomes increasingly necessary at higher energy to operate linear collider in strong quantum beamstrahlung regime, and use to our advantage the quantum effect to suppress beamstrahlung. We then present Monte-Carlo simulations with CAIN for several examples, discuss the characteristics of IP performance in the strong quantum beamstrahlung regime, including luminosity spectrum, angular distribution and its correlation with energy after collision, and examine the feasibility of the approach.

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