Vetoing Two Photon Backgrounds with the BeamCal at the ILC[1]

JACK GILL, University of Colorado at Boulder, URIEL NAUENBERG, GLEB OLEINIK, SILICON DETECTOR DESIGN STUDY COLLABORATION — $\widetilde{\tau}_1^+ \widetilde{\tau}_1^-$ production is a benchmark reaction for ILC detectors. $\widetilde{\tau}_1^\pm$ decays can result in two lepton final states. The same final state can be produced by Standard Model $\gamma^* \gamma^*$ processes. This makes vetoing $\gamma^* \gamma^*$ events important for any $\widetilde{\tau}_1^\pm$ reconstruction. Three types of background are considered, and cuts presented which lead to vetoing of these backgrounds. The efficacy of the veto is considered in the light of adding MIP sensitivity to the BeamCal.

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