

# INVESTIGATION INTO THE SENSITIVITY OF BEAM-BREAKUP INSTABILITY THRESHOLDS TO BEAMLINE COMPONENT MISALIGNMENTS FOR THE CORNELL ENERGY RECOVERY LINAC

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Extensive lattice design studies have been performed for the proposed Cornell Energy Recovery Linac, including the level of orbit and optics distortions expected from a wide range of beamline component field errors and misalignments. In addition, beam-breakup calculation algorithms have been developed in the general framework of the Cornell X-ray ERL design software, enabling their extension to multi-pass optics design for ERLs. We report on investigations into the sensitivity of the calculated instability thresholds to a variety of beamline misalignments.

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