Simulation Studies of the SLC Bunch Compressor (RTL)[*], F. ZIMMERMANN, SLAC - In the 1994/95 SLC run, bunch lengthening in the damping ring along with overcompression in the ring-to-linac transport line (RTL) have caused a steady beam loss of about 10-20% between entrance and end of the RTL, which constitutes a major hindrance to further luminosity increases of the SLC. This paper summarizes studies of longitudinal and six-dimensional dynamics in the RTL, and compares simulation results with measurements. Quadratic dependence of path length on energy and higher-order multipoles in the RTL quadrupoles are both shown to affect the compressor performance. Minor optics changes are suggested which may improve the transmission efficiency.

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