$K \rightarrow \pi\pi$ Amplitudes at Unphysical Kinematics Using Domain Wall Fermions

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Preliminary results will be presented for the lattice calculation of $K \rightarrow \pi\pi$ amplitudes evaluated at unphysical kinematics where all three mesons are at rest. These calculations are carried out using domain wall fermions with 2+1 dynamical flavors, an inverse lattice spacing $a^{-1} = 1.62$ GeV, and a $(3 \text{ fm})^3$ spatial volume. Results relevant to matrix elements of four quark weak operators will be presented and compared with chiral perturbation theory. These calculations are the first part of a larger project intended to use information from such $K \rightarrow \pi\pi$ matrix elements to study the $\Delta I = \frac{1}{2}$ rule and $\epsilon'/\epsilon$ using chiral perturbation theory.