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[K->pipi]_2 decay amplitudes

Monday 19 July 2010 11:00 (30 minutes)

The RBC-UKQCD calculation of Re[A_2] and Im[A_2] for almost physical kaons and pions will be reviewed, where A_2 is the amplitude for the decay of a kaon into two-pions with isospin 2. The simulations are performed on a 32³X64, L_s=32 lattice with N_f=2+1 flavours of light quarks, using the DWF-Iwasaki/DSDR action and the mass dependence of the amplitude is studied.

The calculations include (unitary) pions with a mass of 165 MeV and (partially quenched) pions with a mass of 145 MeV. The operators appearing in the weak Hamiltonian are renormalized non-perturbatively and finite-volume corrections are calculated using the Lellouch-Luscher formula. $Re[A_2]$ will be compared to the experimental value and the phenomenological significance of the result for $Im[A_2]$ will be discussed.

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