Domain wall fluctuations in ferroelectrics RICHARD BRIERLEY, University of Cambridge, PETER LITTLEWOOD, Argonne National Laboratory — Ferroelectric domain walls typically have 90- or 180-degree orientations due to the long-range constraints of dipolar and ferroelastic interactions. We calculate the excitation spectrum for deviations from ideal flat walls in these orientations. In the presence of ferroelastic interactions, fluctuations in the polarization orientation must be matched by changes in local strain. The finite acoustic phonon velocity implies a retarded response of the strain fields. This retardation produces a gap as $k \to 0$, limiting the domain wall motion.