

Abstract Submitted  
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**Domain wall fluctuations in ferroelectrics** RICHARD BRIERLEY,  
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— 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  $k \rightarrow 0$ ,  
limiting the domain wall motion.

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