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Fluctuating Domain Wall Wavefunctions for Symmetry Protected Topological Phases[1] SHENG-JIE HUANG, MICHAEL HERMELE, Department of Physics, University of Colorado at Boulder — Symmetry protected topological (SPT) phases have been argued to be classified by the group cohomology of the symmetry group. In general, it has been challenging to connect this classification directly and intuitively to physical properties. In this talk, we provide a simple picture of SPT ground state wave functions in terms of fluctuating domain walls, for SPT phases in one and two dimensions with a finite internal symmetry group. The structure of group cohomology has a simple physical manifestation in the wave functions we construct. We also employ the fluctuating domain wall picture to analyze physical properties of SPT phases, and relate these directly to the group cohomology structure of the wave function.

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