Emergent supersymmetry at a critical point of a lattice model
SUNG-SIK LEE, Kavli Institute for Theoretical Physics — We present a two dimensional lattice model which exhibits an emergent space-time supersymmetry at a critical point. The lattice model consists of spinless fermion on the honeycomb lattice and boson on the triangular lattice which is dual to the honeycomb lattice. It will be shown that there is only one relevant perturbation at the supersymmetric critical point and the critical theory becomes the 2+1 dimensional N=2 Wess-Zumino theory with two copies of chiral multiplets. Exact values of scaling dimensions can be obtained due to the emergent superconformal symmetry although the critical theory is the interacting theory.

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