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Renormalization group for fractons

Friday, 17 March 2023 11:50 (20 minutes)

Fractons are excitations with mobility constraints that were proposed to constitute a novel phase of matter. Imprints of fractons were identified in the context of quantum error correction, elasticity and quantum Hall effect. Low energy dynamics of fracton theories presents itself with many exotic features and challenges. In order to have a detailed understanding of these phases it is useful to employ dualities. I will introduce a particle-vortex-like duality in the context of the plaquette-dimer height model with fractonic behavior. This model will be studied by means of the renormalization group approach. I will present a Berezinskii-Kosterlitz-Thouless transition of the fracton type that goes beyond known universality classes

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