

Electrically and Magnetically Charged States and Particles in the 2+1-Dimensional \mathbb{Z}_N -Higgs Gauge Model

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Abstract: Electrically as well as magnetically charged states are constructed in the 2+1-dimensional Euclidean \mathbb{Z}_N -Higgs lattice gauge model, the former following ideas of Fredenhagen and Marcu [1] and the latter using duality transformations on the algebra of observables. The existence of electrically and of magnetically charged particles is also established. With this work we prepare the ground for the constructive study of anyonic statistics of multiparticle scattering states of electrically and magnetically charged particles in this model.

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