

Dual formulations of gauge models with static quarks at finite baryon density

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Construction of dual formulations of various abelian $Z(N)$ and non-abelian $U(N)$ and $SU(N)$ lattice gauge theories with static quarks in the presence of non-vanishing chemical potential is reviewed. As an application of the dual formulation for models at finite baryon density we 1) present an exact solution of the Polyakov loop models in the large- N limit and 2) discuss the numerical computations of the Polyakov loop correlations in the $SU(3)$ dual model. Several extensions of the dual transformations are outlined.

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