Approximate Solution of Generalized Ginzburg-Landau-Higgs System via Homotopy Perturbation Method

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Using the homotopy perturbation method, a class of nonlinear generalized Ginzburg-Landau-Higgs systems (GGLH) is considered. Firstly, by introducing a homotopic transformation, the nonlinear problem is changed into a system of linear equations. Secondly, by selecting a suitable initial approximation, the approximate solution with arbitrary degree accuracy to the generalized Ginzburg-Landau-Higgs system is derived. Finally, another type of homotopic transformation to the generalized Ginzburg-Landau-Higgs system reported in previous literature is briefly discussed.