Ground-state solutions of Schrödinger-type equation with magnetic field

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Abstract

Abstract: In this paper, the nonlinear Schrödinger-type equation -([?] + iA) ˆ2 u + u + λ[I_α*(K|u|ˆ2)]Ku=af(|u|)u/|u| in R ˆ3 is considered in the presence of magnetic field, where A [?] C ˆ1 (R ˆ3 ,Rˆ 3), α [?] (0,3), I_α denotes the Riesz potential, K [?] Lˆ p (R ˆ3 ,(0,[?])) for some p [?] (6/(1 + α),[?]], a [?] Lˆ q (R 3 ,[0,[?])) \ {0} for some q [?] (3/2,[?]], and f [?] C(R,[0,[?])) is assumed to be asymptotically linear at infinity. Under suitable assumptions regarding A, K, a, and f, variational methods are used to establish the existence of ground-state solutions of the above equation for sufficiently small values of the parameter λ.

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