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Asymptotic stability of small solitary waves for nonlinear Schrödinger equations with electromagnetic potential in $\mathbb{R}^3$

Consider the nonlinear magnetic Schrödinger equation for $u\colon \mathbb{R}^3 \times \mathbb{R} \to \mathbb{C}$,

$$iu_t = (i\nabla + A)^2 u + Vu + g(u), \quad u(x,0) = u_0(x),$$

where $A\colon \mathbb{R}^3 \to \mathbb{R}^3$ is the magnetic potential, $V\colon \mathbb{R}^3 \to \mathbb{R}$ is the electric potential, and $g = \pm|u|^2 u$ is the nonlinear term. We will show that under suitable assumptions on A and V, if the initial data u_0 is small enough in H^1, then the solution $u(x,t)$ decomposes uniquely into a standing wave part and a dispersive part which scatters.