On the nonlocal Schr\"{o}dinger-Poisson type system in the Heisenberg group

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Abstract

This paper is concerned with the following nonlocal Schr\"{o}dinger-Poisson type system: \begin{equation*} \begin{cases} -\left(a-b\int_{\Omega}|\nabla_{H}u|^{2}dx\right)\Delta_{H}u+\mu\phi u=\lambda|u|^{q-2}u, &\mbox{in} \ \Omega,\\ -\Delta_{H}\phi=u^2 & \mbox{in}\ \Omega,\\ u=\phi=0 & \mbox{on}\ \partial\Omega, \end{cases} \end{equation*} where $a, b>0$ and Δ_H is the Kohn-Laplacian on the first Heisenberg group $\mathbb{H}^1$, $\Omega\subset \mathbb{H}^1$ is a smooth bounded domain, $\lambda>0$, $\mu\in \mathbb{R}$ are some real parameters and 1 “”

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