# Some results on the Schrodinger Poisson equation with external potential

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We Consider the following Schrödinger-Poisson equation with external potential

$$-\Delta u + V(x)u + \lambda u \int_{\mathbb{R}^3} \frac{u^2(y)}{|x-y|} dy = |u|^{p-1}u, \ x \in \mathbb{R}^3, \tag{1}$$

where $\lambda > 0$ is a real number, $p \in (1, 5)$ and $V(x)$ is a real function which is called external potential. In this talk, we give some results about the existence of solution to this equation with several important external potentials. Moreover, we also give some behaviors of the solutions.