Abstract: In this talk, we consider the following Cauchy problem for $1 < \alpha \leq 2$

$$-i\partial_t u + (-\Delta)^{\frac{\alpha}{2}} u = \sigma(|\cdot|^{-\alpha} * |u|^2)u, \ u(0,\cdot) = \varphi. \tag{1}$$

We prove that there exists a globally well-posed solution to (1) and the solution scatters to free waves asymptotically as $t \to \pm\infty$ whenever the initial data is radial and sufficiently small in $L^2(\mathbb{R}^3)$. This result is shown to be optimal by proving the discontinuity of the flow map in the super-critical range. We employ the standard contraction argument in a function space constructed based on the space of bounded quadratic variation V^2. The main ingredients for the proof are $L^2(\mathbb{R}^{1+3})$ bilinear estimates for free solutions and its transference to adapted V^2 spaces. This is joint work with Sebastian Herr.