

Observability of the 1D Schrödinger equation along space-time curves

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In this talk, we consider the 1D free periodic fractional Schrödinger equation $\partial_t u = (-\partial_x)^s u = 0$ with initial data $u(0, x) = u_0(x)$ in $L^2(\mathbb{T})$. We prove that this equation is observable from certain curves $x = \gamma(t)$, $0 < t < T$.

When the curves are straight lines, this is based on Ingham Inequalities and is joint work with V. Komornik.

For more general curves, we use different techniques based on stationary phase estimates and is ongoing work with B. Haak, M. Wang and Y. Wang.

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