

CONCENTRATION-COMPACTNESS FOR SINGULAR FRACTIONAL SCHRÖDINGER EQUATIONS WITH OSCILLATORY NONLINEARITIES

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28/05/2018

The aim of our talk is to study a concentration-compactness principle for inhomogeneous fractional Sobolev space $H^s(\mathbb{R}^N)$ for $0 < s \leq N/2$. As an application we establish Palais-Smale compactness for the functional associated to the fractional Schrödinger equation $(-\Delta)^s u + a(x)u = f(x, u)$ for $0 < s < 1$. Moreover, we obtain existence results for a wide class of possible singular potentials $a(x)$, not necessarily bounded away from zero and for oscillatory nonlinearities in both subcritical and critical growth range.

Joint work with João Marcos do Ó (UNB).