



MAFIA - the seminar you can't refuse

**On the number of bound states
for the fractional Schrödinger operator
with a super-critical exponent**

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12:00–13:00

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Trojanova 13, 12000 Praha

Abstract:

We will consider in this talk the number of negative eigenvalues $N_{<0}(H_s)$ of the fractional Schrödinger operator $H_s = (-\Delta)^s - V(x)$ in $L^2(\mathbb{R}^d)$, in any dimension $d \geq 1$ and for any $s > 0$. After recalling results in the subcritical case $s < d/2$, including the celebrated Cwikel-Lieb-Rozenblum bounds for dimensions $d \geq 3$ and Bargmann's estimate in dimension $d = 1$, we will focus on the supercritical case $s \geq d/2$. We will describe bounds on $N_{<0}(H_s)$ depending on $s - d/2$ being an integer or not, the critical case $s = d/2$ requiring a further analysis. This is joint work with Sébastien Breteaux and Viviana Grasselli.