In this talk I will discuss a system of $N$ bosons trapped in a two-dimensional box with area one, interacting through a repulsive potential with scattering length exponentially small in the number of particles, the so-called Gross-Pitaevskii regime. Assuming some regularity conditions on the interaction potential $V$, we show that low-energy states exhibit complete Bose-Einstein condensation, with almost optimal bounds on the number of orthogonal excitations.

I will also explain how it is possible, exploiting this result, to get further information on the low-lying excitation spectrum of the system. This is a joint work with S. Cenatiempo and B. Schlein, and part of my PhD thesis [1, 2, 3].

REFERENCES