

THE UNIVERSITY



OF HONG KONG

*Institute of Mathematical Research
Department of Mathematics*

Numerical Analysis Seminar

Computation of Localized Schrödinger Eigenstates

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Abstract

In this talk, we consider Bose-Einstein condensates in disorder potentials, which are modeled by the Schrödinger or Gross-Pitaevskii eigenvalue problem. In the linear case, we are able to quantify exponential localization of the ground state, depending on statistical parameters and the strength of the potential. Moreover, we present an efficient way to compute the low-energy eigenstates. In the regime of weak particle interaction, we consider the one-dimensional case and prove localization by an interpretation of the nonlinearity as a perturbation of the given disorder potential.

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| Date: | March 5, 2025 (Wednesday) |
| Time: | 4:00 – 5:00 pm |
| Venue: | ZOOM: https://hku.zoom.us/j/ Meeting ID: 913 6532 3891 Password: 310656 |

All are welcome