

**Proposition of contributed talk by Louis Garrigue:
Homogenization of Schrödinger's operators having oscillating potentials**

Homogenization theory usually studies the convergence of the functions u_ε , solutions to the equation $\operatorname{div} A\left(\frac{x}{\varepsilon}\right) \nabla u_\varepsilon = f$, when $\varepsilon \rightarrow 0$ and where A is periodic. Only two works were existing concerning the homogenization of Schrödinger's operators $-\Delta + \frac{1}{\varepsilon}v\left(x, \frac{x}{\varepsilon}\right)$. The most significant difference with the canonical case is the fact that the formal computations give the right asymptotic series for both linear and eigenmode equations. We show convergence in the resolvent sense for the second order and several other phenomenas that we remarked during this study.