

## Mathematical Physics

# Direct Scaling Analysis of localization in disordered systems. II. Multi-particle lattice systems

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We adapt a simplified version of the Multi-Scale Analysis presented in \cite{C11} to multi-particle tight-binding Anderson models. Combined with a recent eigenvalue concentration bound for multi-particle systems \cite{C10}, the new method leads to a simple proof of the multi-particle dynamical localization with more optimal decay bounds on eigenfunctions than in \cite{CS09b,AW09a,AW09b}, for a large class of strongly mixing random potentials. All earlier results required the random potential to be IID. We also extend the result on multi-particle localization to models with a rapidly decaying interaction.

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