Consistent discretization of the Lippmann–Schwinger equation

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Abstract

In this course, we will discuss spatial discretization of the Lippmann–Schwinger using a Galerkin technique. The resulting discretization is consistent, because the linear and bi-linear forms of the weak form of the Lippmann–Schwinger equation are evaluated exactly. The derivation of the discrete Green operator will clarify how "FFT-based homogenization methods" rely on... the FFT.

The following topics will be discussed

- Weak form of the LS equation
- Galerkin discretization of the LS equation
- The discretized operators
- Applying the discrete Green operator
- Towards linear LS solvers

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