Lattice Green's functions

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1 Lattices and their Green's functions

1.1 Definitions

Graph is a collection of points (enumerable set X) and bonds (subset of symmetrized X^2) with finite coordination number, which is the maximum number of bonds attached to a point (i.e. simple undirected finite-dimensional graph). In what follows we consider only connected graphs and denote a graph simply by the set of its points X. The bonding between points establishes the metrics as the length of the shortest path between two points.