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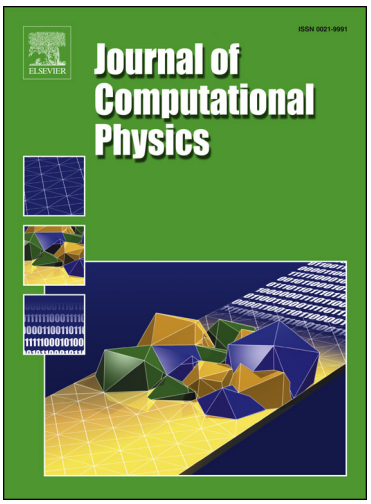

Improved recursive Green's function formalism for quasi one-dimensional systems with realistic defects

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Graphical abstract

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Improved recursive Green's function formalism for quasi one-dimensional systems with realistic defects

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With the improved recursive Green's function formalism + renormalization decimation algorithm (RGF+RDA), the conductance of mesoscopic systems with realistic defects can be computed much faster than with the common RGF. For a constant system length, the calculation time t scales logarithmically with the number of defects N_D. This is true for the recursive decimation scheme (RDS) as well as for the forward iteration scheme (RDS).