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DMRG applied to quantum impurity models ANDREAS WEICHSSELBAUM, JAN VON DELFT, Ludwig Maximilian University — Quantum impurity models are analyzed routinely and reliably at very low energies using the Numerical Renormalization Group (NRG). Its great benefit of energy scale separation, however, comes at the cost of limited resolution at finite energy. By realizing that the NRG shares the same algebraic structure as the density matrix renormalization group (DMRG) given in terms of matrix product states, several strict NRG constraints such as its rigid discretization scheme in energy space can be relaxed due to the variational principle of DMRG. Our recent work in that respect will be discussed.

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