One-dimensional periodic Anderson model at partial band filling

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Complex Systems — An effective hamiltonian is derived for the one-dimensional
periodic Anderson model via bosonization. The effective hamiltonian is shown to
reproduce all the features of the model as identified by DMRG and provides new
information on the ferromagnetic to paramagnetic phase transitions and the para-
magnetic phase. We are using a non-Abelian DMRG to determine numerically the
phase diagram of the one-dimensional periodic Anderson model. We found very
good agreement between the bosonization approach and the DMRG results.

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