DMRG study of the periodic Anderson model PEDRO BERTUSSI,
MARCELLO SILVA NETO, TATIANA RAPPOPORT, RAIMUNDO DOS SAN-
TOS, Universidade Federal do Rio de Janeiro, ANDRE MALVEZZI, Universidade
Estadual Paulista — We study the ground state of the one-dimensional symmet-
ric periodic Anderson model for various band fillings, n, and for several values of
the on-site repulsion U, and of the hybridization V between the c- and f-bands.
Through the Density Matrix Renormalization Group (DMRG) method, we calcu-
late magnetic correlation functions, and their structure factors, charge and pairing
correlations, as well as inter-orbital correlations, such as $\langle c^\dagger f + h.c.\rangle$, $\langle \mathbf{S}^c \cdot \mathbf{S}^f \rangle$; we
also obtain charge and spin gaps. The analysis of these quantities allows a thorough
characterization of the system, which can be summarized in a phase diagram in the
parameter space (U, V, n).

Pedro Bertussi
Universidade Federal do Rio de Janeiro