sd-pf cross-shell model studies of M1 strength in argon isotopes

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Large scale shell model calculations in the valence space spanned by \textit{sd} and \textit{pf} major shells for \textit{36–40}Ar isotopes are presented. The mechanism of M1 strength fragmentation, the role of different \textit{n}-particle \textit{n}-hole cross-shell excitations and the evolution of the M1 strength with increase of neutron number are discussed.