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Exotic neutron-rich sd - pf nuclei and nuclear force

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Recent results of large-scale shell-model calculations will be overviewed for exotic neutron-rich nuclei in the sd - pf region. One of the most exciting findings is the change of shell structures in extreme conditions. For instance, the $N=20$ gap may be quite small in some of exotic Ne-Na-Mg isotopes leading to (near-)degeneracy of positive and negative parity states, and new magic numbers such as $N=32$, 34 may emerge in neutron rich Ca-Ti. Theoretical descriptions of these nuclei will be presented in close connection to particular properties of Nucleon-Nucleon interaction.