Exploring the chiral phase transition of $N_f=2$ flavour QCD with valence overlap fermions

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Overlap fermions are particularly well suited to study the dynamics of the chiral symmetry restoration transition of QCD at finite temperature. Using gauge field configurations on $24^3 \times 10$ lattices with $N_f = 2$ flavours of dynamical Wilson-clover quarks generated by the DIK collaboration, we compute the lowest $O(50)$ eigenmodes of the overlap Dirac operator and analyse their density, local chirality and localisation properties. The main emphasis is placed on the utilisation of these modes to characterise the changes of the topological and (anti-)selfdual structure of the gauge fields across the transition.