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Mesons upon low-lying Dirac mode exclusion

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We study the iso-scalar and iso-vector mesons under the exclusion of the low-lying Dirac modes from valence quarks with the overlap operator within the two flavour lattice QCD. We study mesonic correlators and extract states at each level of such low-mode truncation. Our observations support a simultaneous restoration of both $SU(2)_L$ \times $SU(2)_R$ and $U(1)_A$ symmetries. We finally observe a degeneracy of all isovector and isoscalar J=1 mesons that serves as an indication of some higher symmetry in the chirally restored regime.

Primary author: Mr DENISSENYA, Mikhail (University of Graz)
Co-authors: Prof. LANG, Christian (University of Graz); Prof. GLOZMAN, Leonid (University of Graz)
Presenter: Mr DENISSENYA, Mikhail (University of Graz)
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