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On improvement and renormalisation of quark currents with stabilised Wilson fermions

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We report on the non-perturbative determination of the improvement coefficient c_A of the axial vector current $A^\mu(x)$ in three-flavour lattice QCD with stabilised Wilson-Clover fermions.

Our computational method exploits the PCAC relation for two different pseudo-scalar states within the Schrödinger functional, which are modelled by altering the spatial structures at the boundaries via properly chosen wavefunctions.

The lattice spacings considered span a range that matches the gauge field ensembles with the stabilised Wilson-Clover action being generated by the OPEN LATTICE initiative.

In the same framework and using chiral Ward identities, we also present preliminary results on the renormalisation constants Z_V and Z_A of the vector and axial vector current, respectively.

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