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Nucleon axial form factors from two-flavour Lattice QCD

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We present preliminary results on the axial form factor $G_A(Q^2)$ and the induced pseudo-scalar form factor $G_P(Q^2)$ of the nucleon. The relevant matrix elements were computed on CLS ensembles with $N_f=2$ non-perturbatively improved $O(a)$ Wilson fermions at three lattice spacings, namely $a = 0.050, 0.063, 0.079$ fm. These calculations were performed with pion masses ranging from as low as $m_\pi = 195$ MeV to $m_\pi = 473$ MeV with box lengths ranging from $L = 2.4 - 4$ fm and up to a total of 4000 measurements on each ensemble. A systematic study of the contribution of excited states is performed by analysing the relevant matrix elements at several source-sink separations. Preliminary results on the axial radius r_A^2 are also presented.

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