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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^2_A are also presented.

Primary authors: Prof. WITTIG, Hartmut (Institut für Kernphysik); Dr JUNNARKAR, Parikshit (Helmholtz Institut Mainz)

Co-authors: Mr JAEGER, Benjamin (Swansea University); Dr DJUKANOVIC, Dalibor (Helmholtz Institut Mainz); Dr VON HIPPEL, Georg (University of Mainz); Prof. MEYER, Harvey (Institut für Kernphysik, Mainz); Mr HUA, Jiayu (Institut für Kernphysik); Dr CAPITANI, Stefano (Helmholtz Institut Mainz); Dr RAE, Thomas (Institut für Kernphysik)

Presenter: Dr JUNNARKAR, Parikshit (Helmholtz Institut Mainz)

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