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## The pion scalar form factor with $N_f = 2 + 1$ Wilson fermions

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We report preliminary results from an analysis of the pion scalar form factor computed on a set of the  $\text{tr}[M] = \text{const}$  CLS gauge ensembles with  $N_f = 2 + 1$  Wilson Clover-improved sea quarks. The calculations are carried out for light quarks masses corresponding to  $M_\pi \approx 0.130\text{MeV} \dots 350\text{MeV}$ , four values of the lattice spacing  $a \approx 0.050\text{fm} \dots 0.086\text{fm}$  and a large range of physical volumes. A fine-grained momentum resolution is achieved by allowing for non-vanishing sink momenta and by including two particularly large and fine boxes close to physical quark masses (i.e.  $T \times L^3 = 192 \times 96^3$ ,  $M_\pi \leq 172\text{MeV}$ ,  $a \leq 0.064\text{fm}$ ). The pertinent quark disconnected contributions have been computed to high precision using a scheme combining 1.) the one-end trick on stochastic volume sources for the computation of differences between two quark flavors with 2.) the hopping parameter expansion and hierarchical probing to evaluate the loops for the heaviest, single quark flavor.

### Topical area

Structure of Hadrons and Nuclei

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