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Low lying baryon spectrum with $N_f=2+1+1$ dynamical twisted quarks.

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We present first results on the octet and decuplet strange baryon spectrum with $N_f=2+1+1$ twisted mass quarks using a mixed action approach. Namely, we use an Osterwalder Seiler valence strange quark with a mass matched to the kaon mass computed with the unitary action. We also present results in the unitary setup, and compare with those obtained in the mixed action.

This comparison is used to quantify the lattice artefacts introduced by the mixed action approach.

We investigate the effect of the strange and charm quark in the sea by using two lattice spacings and comparing with our $N_f=2$ results [1].

[1] ETMC, Phys. Rev. D 80 114503, 2009

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talk

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