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Electromagnetic effects on the light pseudoscalar mesons and determination of m_u/m_d

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The MILC Collaboration has completed production running of electromagnetic effects on light mesons using asqtad improved staggered quarks. In these calculations, the photons are quenched using the non-compact formalism. Four lattice spacings from 0.12 fm to 0.045 fm have been used. Finite volume effects with $a = 0.12$ fm have been studied with spacial sizes $L_s = 12, 16, 20, 28, 40,$ and 48. The chiral-continuum fit of the meson masses allows calculation of corrections to Dashen's theorem and determination of the ratio of up to down quark masses.

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