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Precision charmonium spectroscopy on CLS ensembles

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The masses of the lowest charmonium states are determined on a large set of coordinated lattice simulations (CLS) gauge ensembles with $N_f=2+1$ sea quark flavours of non-perturbatively improved Wilson fermions. The inverse lattice spacing is varied from about 2 GeV up to more than 5 GeV, enabling a controlled continuum limit extrapolation. This allows the impact of the neglected charm quark annihilation diagrams and the electromagnetic interaction to be assessed.

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