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Computing hybrid static potentials at short quark-antiquark separations from fine lattices in SU(3) Yang-Mills theory

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We compute hybrid static potentials in SU(3) Yang-Mills theory at short quark-antiquark separations using four different small lattice spacings as small as 0.04 fm. The resulting static potentials are important e.g. when computing masses of heavy hybrid mesons in the Born-Oppenheimer approximation. We also discuss and exclude possible systematic errors from topological freezing, the finite lattice volume and glueball decays.

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