Coulomb gauge studies of SU(3) Yang-Mills theory on the lattice

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Gauge fixing and Gribov copies

Lattice artifacts can be reduced by

- cone cut: removes lattice artifacts. However, both components of the gluon propagator are lost (lower panel)
- cylinder cut: removes lattice artifacts and suppresses Gribov copies (upper panel)

Coulomb potential

- Infrared behaviour of the lattice observable

- Both components do not scale for \( \beta = 5.8 \):
  \( \beta = 5.8 \) for gluon propagator
  \( \beta = 4.6 \) for ghost propagator