

Various propagators. The propagators  $D_{\lambda A_0}$  and  $D_{AV}$  represent mixing.

The Coulomb gauge is a unitary gauge. Consequently in the first-order formalism, the  $c - \bar{c}$  ghost loop cancels the  $\lambda - A_0$  loop, etc.

$$\int d^{(d+1)}p \left[ D_{A_0 \lambda}(\vec{p}) D_{A_0 \lambda}(\vec{k} + \vec{p}) - D_{c\bar{c}}(\vec{p}) D_{c\bar{c}}(\vec{k} + \vec{p}) \right] = 0.$$

This gets rid of the horrible energy divergences,

$$dp_0 \ 1 = \infty.$$