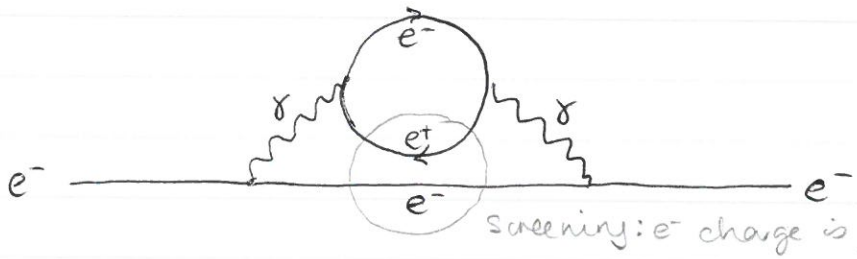
QED what is a neutral charge? (+ −) Just two orthogonal charges.



screening: e^- charge is *diluted*

Virtual e^+e^- pairs are polarised, so bare charge of e^- is screened by e^+

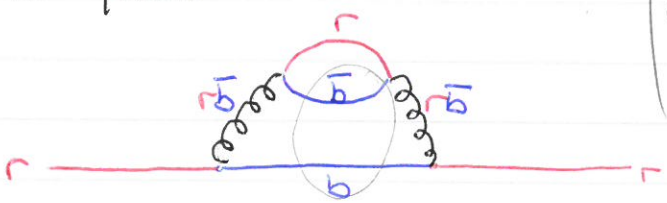
QCD what is colourless? 1) no colour

2) equal amounts of all colour

ie. (rgb) or ($r\bar{r} + b\bar{b} + g\bar{g}$)

3 orthogonal charges.

eg a red quark

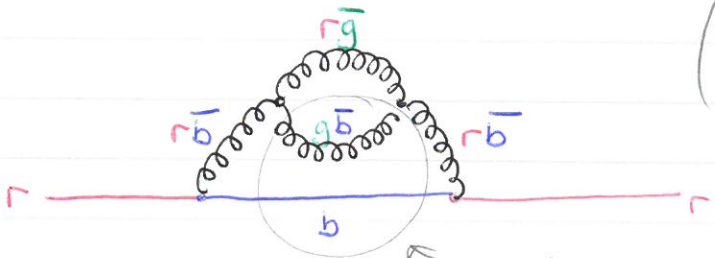


(nb. $q_r \rightarrow g_{r\bar{b}} + q_{\bar{b}}$ intermediate state chosen
other possibilities exist
eg $q_r \rightarrow g_{r\bar{g}} + q_{\bar{g}}$)

↖ this does not have equal parts rbg
∴ coloured!

colour of quark is *increased* by this anti-screening

or



(nb. other possibilities for the ggg vertex exist)

↖ again, this is coloured & *increases* the colour of the quark

anti-screening