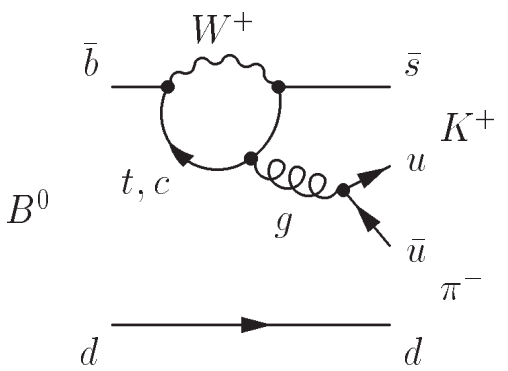
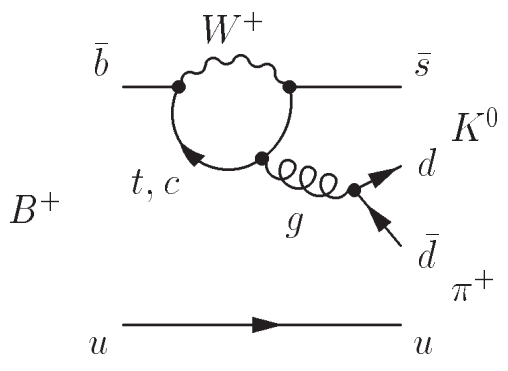
Introduction

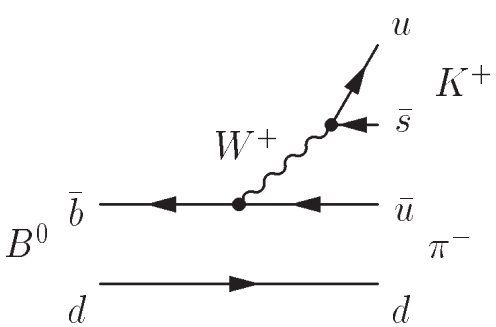
- There are two main types of rare decays of B mesons:
  - ⋆ $b \to u$ spectator diagrams (suppressed by V_{bu})
  - ⋆ $b \to s$ "penguin" diagrams (suppressed by loops)
    - ⋆ EM penguins: $b \to s\gamma$ (seen by CLEO '92 - '94)
    - ⋆ Gluonic penguins: $b \to sg$ (seen by CLEO in '97)



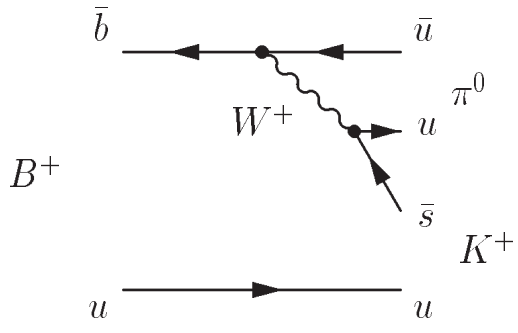
(a)



(b)



(c)



(d)