nuclear physics at RHIC

RHIC investigates properties of nuclear matter under extreme energy and density

for gold, max energy = 100 GeV/nucleon
Kaons

\[ K^+ = u \bar{s} \quad K^- = \bar{u}s \]
\[ \pi^+ = u \bar{d} \quad \pi^- = \bar{u}d \]

- strangeness production is predicted to be enhanced if a QGP is formed, due to gluon fusions (PRL48, 1066)
  \[ g + g \rightarrow s + \bar{s} \rightarrow \text{strange hadrons} \]
- interesting sharp peak of \( K^+/\pi^+ \) ratio
antiprotons and protons

- antimatter/matter reaching unity with increasing collision energy