The only particles which can make tracks in our detector are those which are charged and live long enough.

- **Pions**: $\pi^+ = u\bar{d}$, $\pi^- = d\bar{u}$, $m_{\pi^\pm} = 140$ MeV
  - lightest and most common of mesons
- **Kaons**: $K^+ = u\bar{s}$, $K^- = s\bar{u}$, $m_{K^\pm} = 494$ MeV
  - lightest mesons with strange quarks
- **Protons and antiprotons**:
  $p = uud$, $\bar{p} = \bar{u}\bar{d}d$, $m_p = 938$ MeV
  - the only truly stable hadrons in nature
- **Electrons and positrons**: $e^\pm$, $m_e = 0.5$ MeV
  - lightest charged leptons, also stable
- **Muons**: $\mu^\pm$, $m_\mu = 107$ MeV
  - what’s left at the back of the detector

Other hadrons are observed via their decays, e.g. $\rho^0 \rightarrow \pi^+\pi^- (770$ MeV)