Main Experimental Problems in Electron Pair Measurements

- $N_{e^+e^-}/N_{ch} \sim 10^{-5}$
  - solved by using Ring Imaging Cherenkov detectors with high threshold $\gamma_{th} \sim 31$
  - 95 $\%$ of all charged hadrons do not produce any signal

- $N_{e^+e^-}/N_{\gamma} \sim 10^{-5}$
  - solved by minimizing the radiation length within the detector acceptance

    $X/X_0 < 1\% \rightarrow N_{e^+e^-}/N_{\gamma\rightarrow e^+e^-} \sim 10^{-3}$

- $\rightarrow$ **still large combinatorial background**
  - $\gamma \rightarrow e^+e^-$
  - $\pi^0 \rightarrow e^+e^-\gamma$

    pair background $\propto (dN_{ch}/dy)^2$