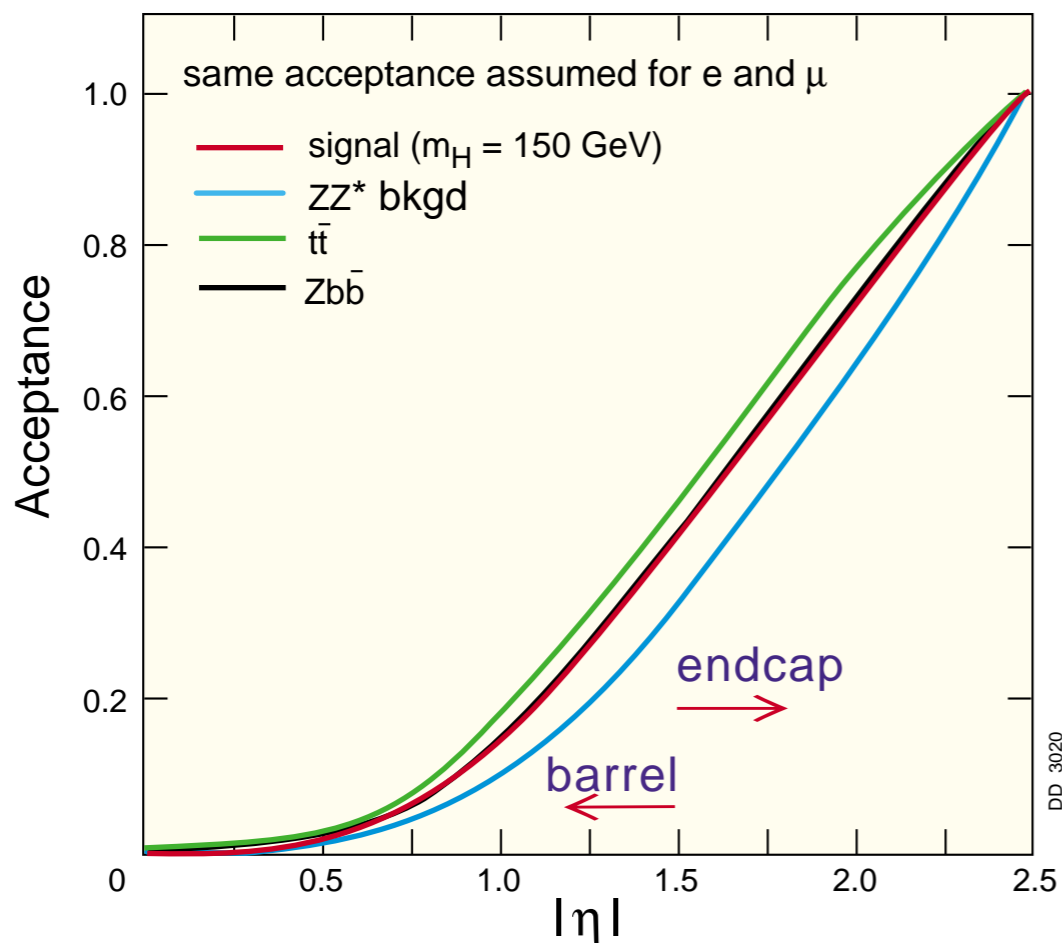


# CMS Higgs discovery channels

## lepton acceptance and best usage of tracker

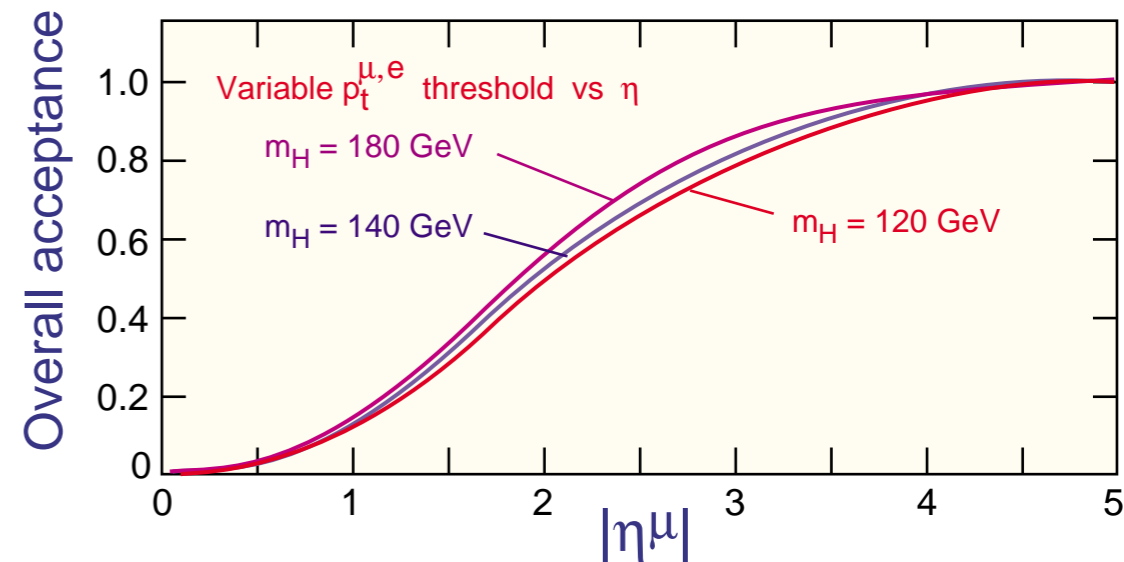
$H \rightarrow ZZ^* \rightarrow 4\ell^\pm$  acceptance

acceptance as a function of rapidity coverage for signal and backgrounds normalized to maximal CMS acceptance



→ track reconstruction algorithms must be developed for maximal rec. efficiency, especially for  $|\eta| > 2.0$  and around  $|\eta| \sim 1.2$  where no. of points per track diminishes - for discovery phase !! do every effort to minimize material budget in tracker for electrons at  $|\eta| > 1.5$  !!

Lepton acceptance vs  $\eta$  for  $H \rightarrow ZZ^* \rightarrow 4\ell^\pm$



Differential geometrical acceptance for leptons in  $H \rightarrow ZZ^* \rightarrow 4\ell^\pm$

