



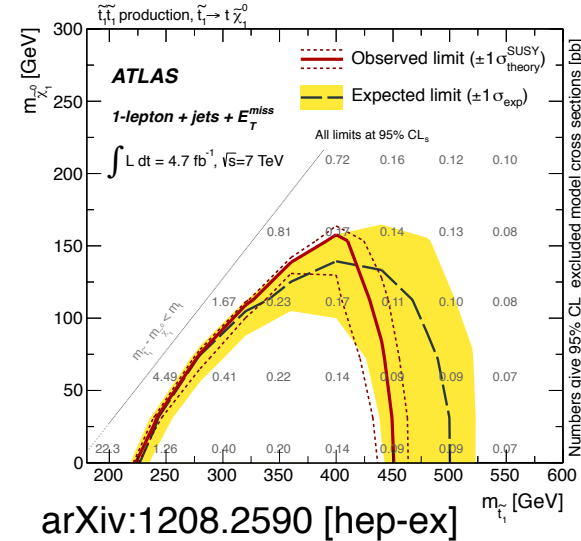
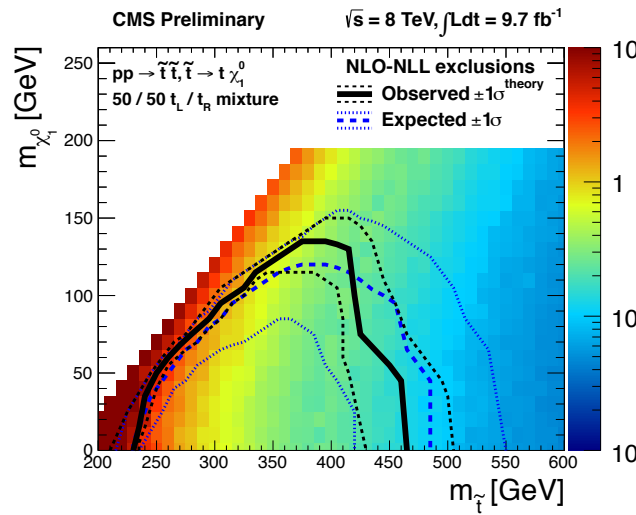
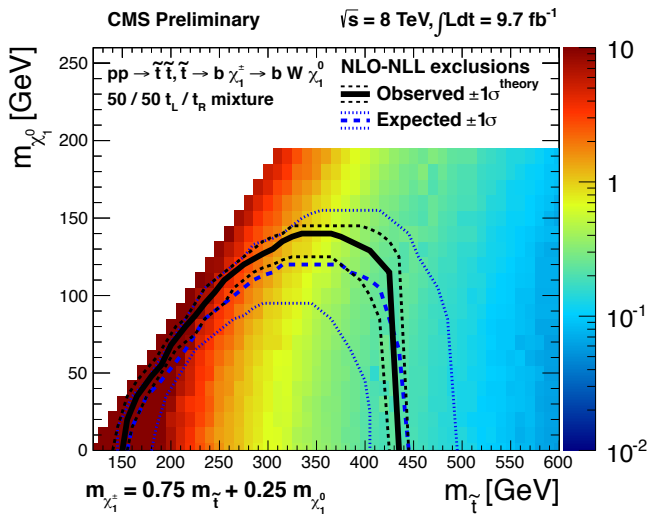
# CMS vs. ATLAS comparison



$$\tilde{t} \rightarrow b\chi^\pm \quad x = 0.75$$

$$\tilde{t} \rightarrow t\chi^0$$

$$\tilde{t} \rightarrow t\chi^0$$



- When correcting for luminosity and  $\sqrt{s}$ , the ATLAS limit covers more of the  $\tilde{t} \rightarrow t\chi^0$  space for 2 reasons:
  - 1) **Different signal model**: CMS signal model has **unpolarized tops** from  $\tilde{t} \rightarrow t\chi^0$ . ATLAS signal model has **top quarks which are mostly right-handed**. This choice increases the large lepton  $p_T$  and  $M_T(\ell, MET)$  acceptance because it causes the lepton to be emitted preferentially parallel to the top boost. **We estimate the size of this effect to be ~25%**.
  - 2) **Tuned kinematical requirements**: The most important one appears to be the **hadronic top reconstruction**. This is not currently implemented in the CMS analysis in order to **maintain sensitivity to both the  $\tilde{t} \rightarrow t\chi^0$  and  $\tilde{t} \rightarrow b\chi^\pm$  decay modes**.