

**CMS Preliminary**2HDM+a,  $h \rightarrow b\bar{b}$  $\sin \theta = 0.35$ ,  $m_\chi = 10$  GeV,  $m_A = m_H = m_{H^\pm} = 600$  GeV

solid (dashed) lines: observed (expected) limit

unc. band:  $\pm 1$  std. dev. on exp. limit95% C.L. asymptotic limit on  $\mu = \sigma / \sigma_{\text{theory}}$ 

100

10

1

0.1

0.5

1

2

4

8

20

50

 $\tan \beta$  $\pm 20\%$  theory uncertainty—  $m_a = 100$  GeV—  $m_a = 150$  GeV—  $m_a = 200$  GeV—  $m_a = 250$  GeV—  $m_a = 300$  GeV