

Error Study of Smu pair Analysis

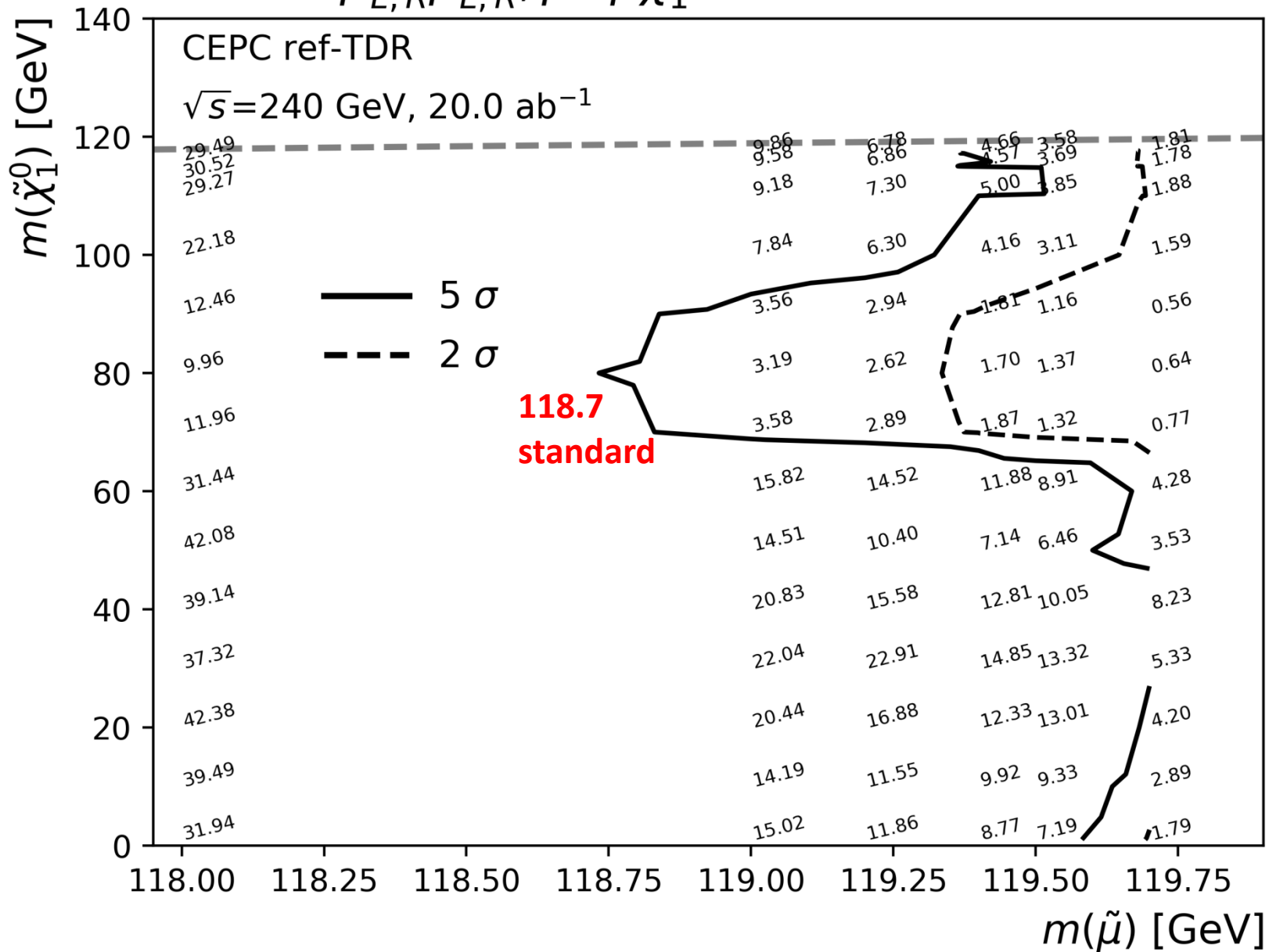
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16th/April/2025

1. Current stat. \oplus 5% sys, no muid **Standard**

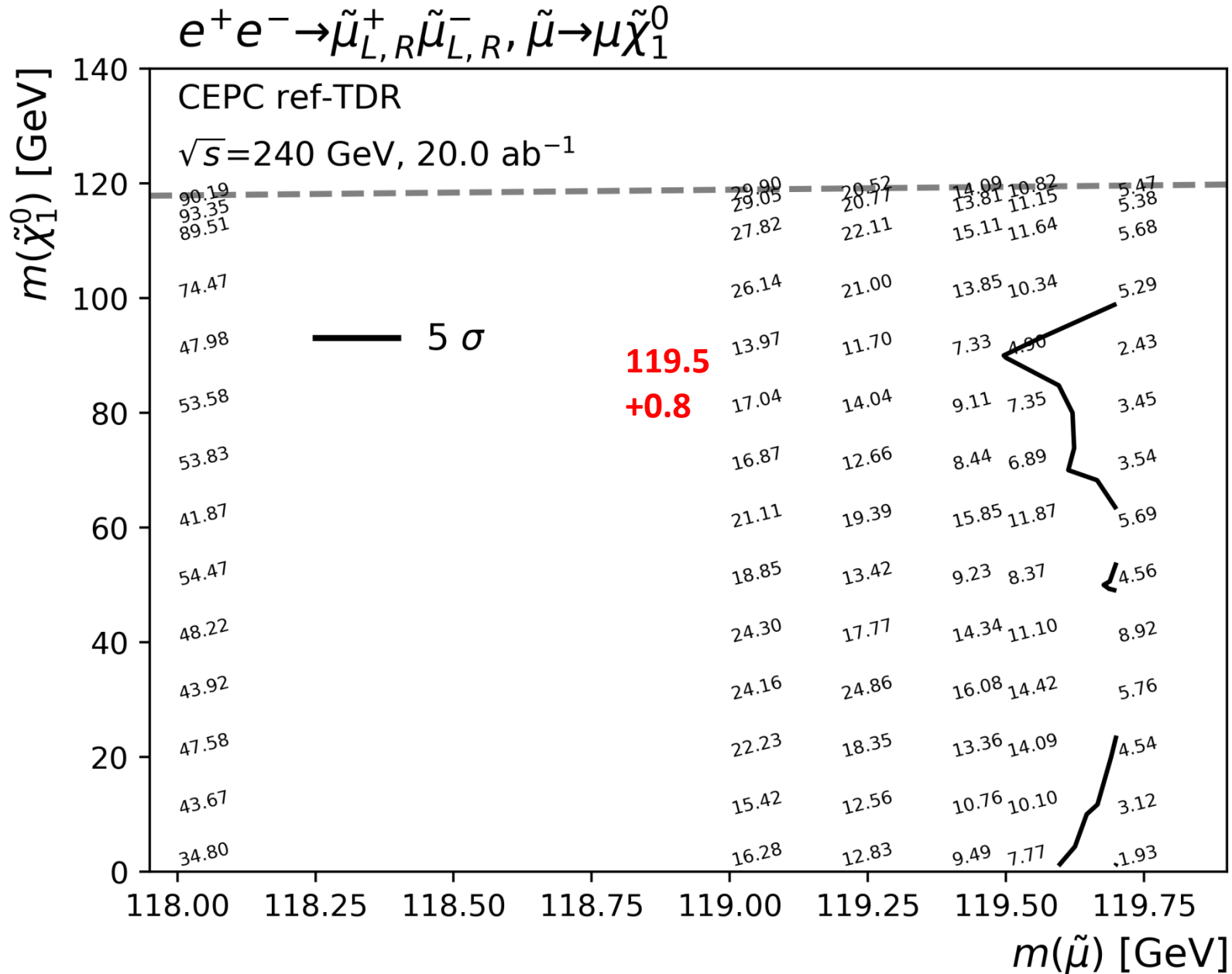
$$e^+e^- \rightarrow \tilde{\mu}_{L,R}^+ \tilde{\mu}_{L,R}^-, \tilde{\mu} \rightarrow \mu \tilde{\chi}_1^0$$

Default : M SR: Emu25GeV



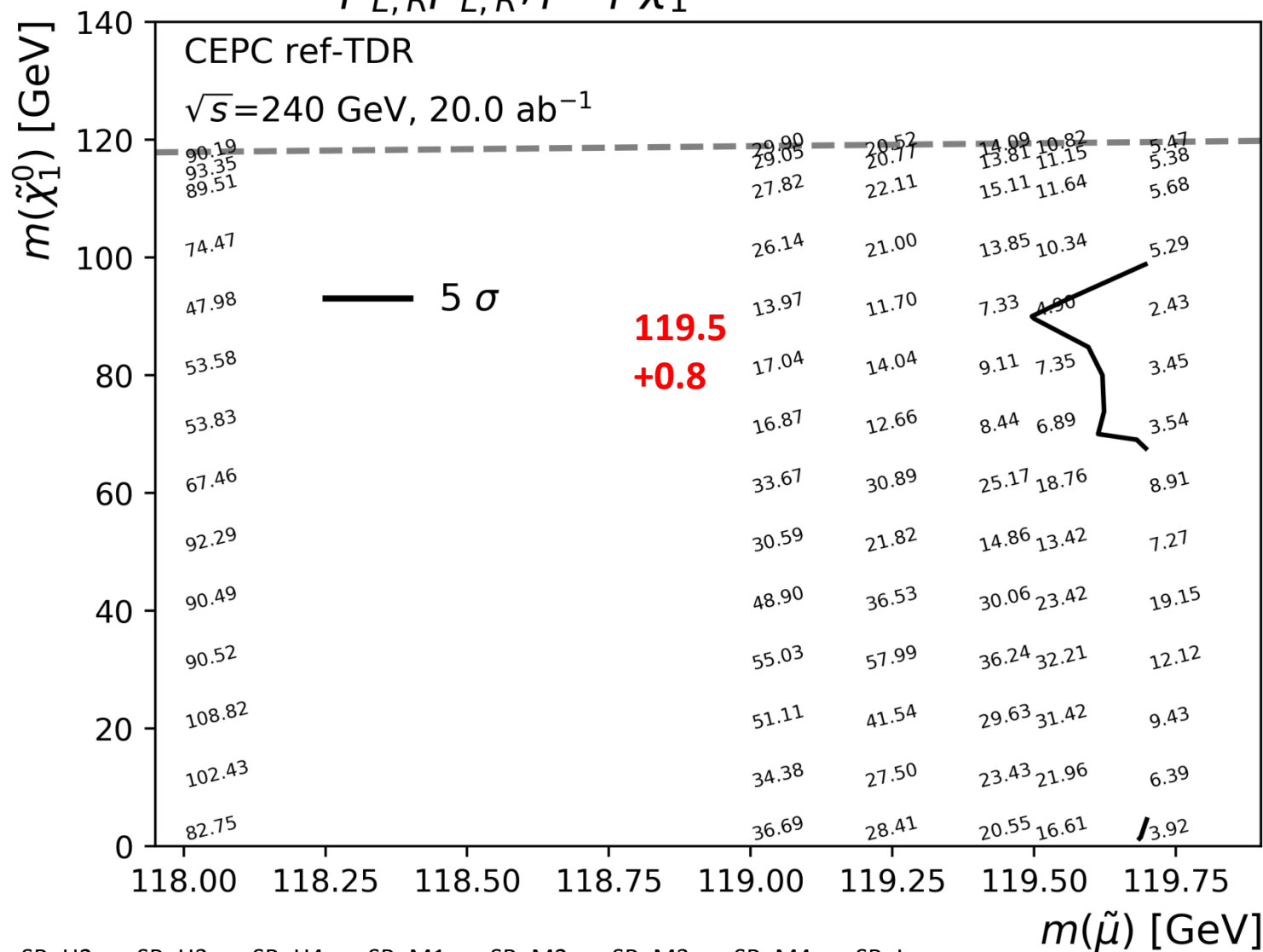
2. Current stat. \oplus 0% sys, no muid

0% sys is important



3. 3% stat. \oplus 0% sys, no muid 3% stat less important

$$e^+e^- \rightarrow \tilde{\mu}_{L,R}^+ \tilde{\mu}_{L,R}^-, \tilde{\mu} \rightarrow \mu \tilde{\chi}_1^0$$



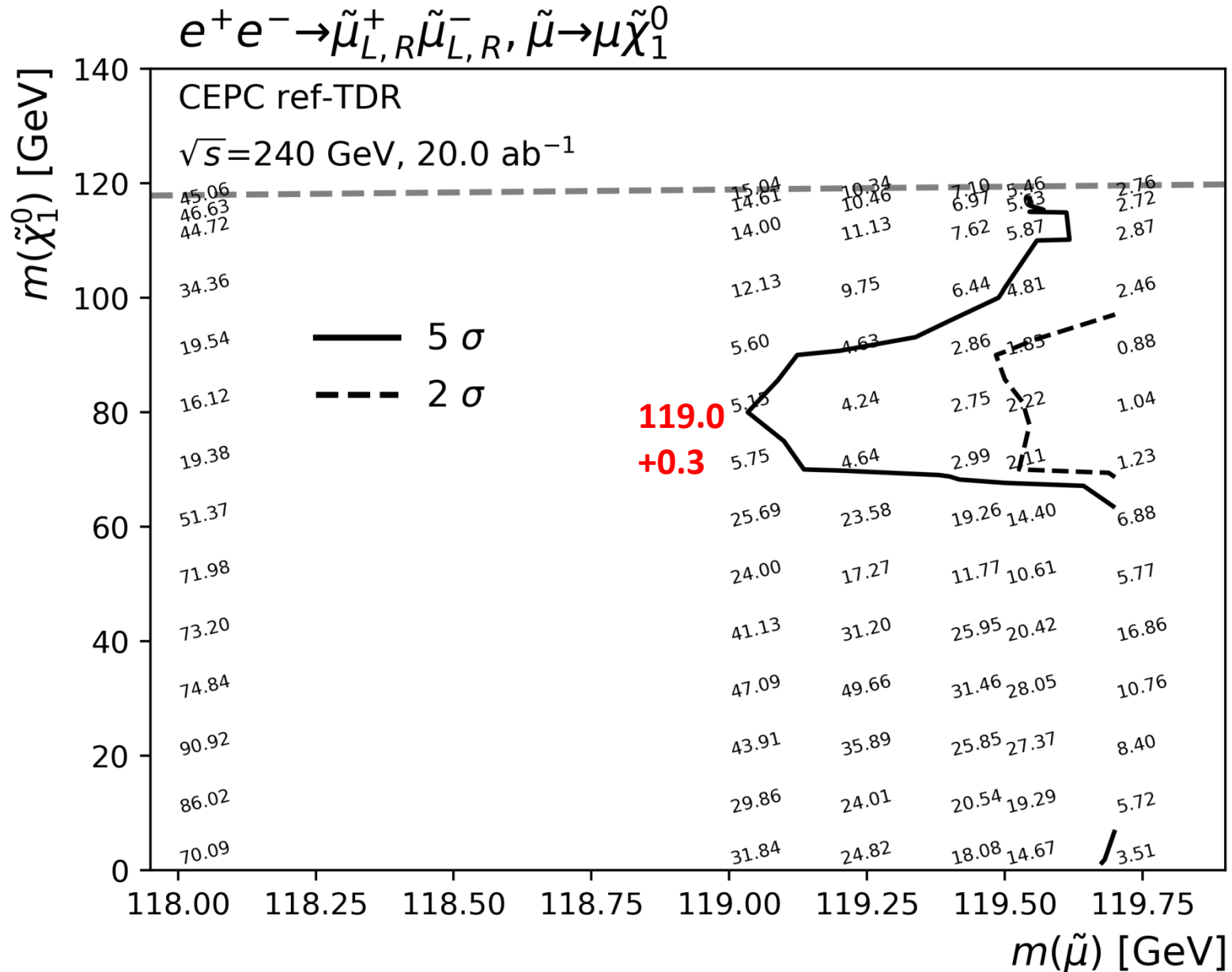
SR_H1,err,SR_H2,err,SR_H3,err,SR_H4,err,SR_M1,err,SR_M2,err,SR_M3,err,SR_M4,err,SR_L,err
 Current stat.

2115.62, 112.63,0.00, 0.00,1697.08, 93.32,328.50, 36.65,35272.26, 525.39,0.00, 0.00,40203.08, 522.54,91197.51, 814.20,27449.37, 453.85
 $\leq 3\%$ stat.

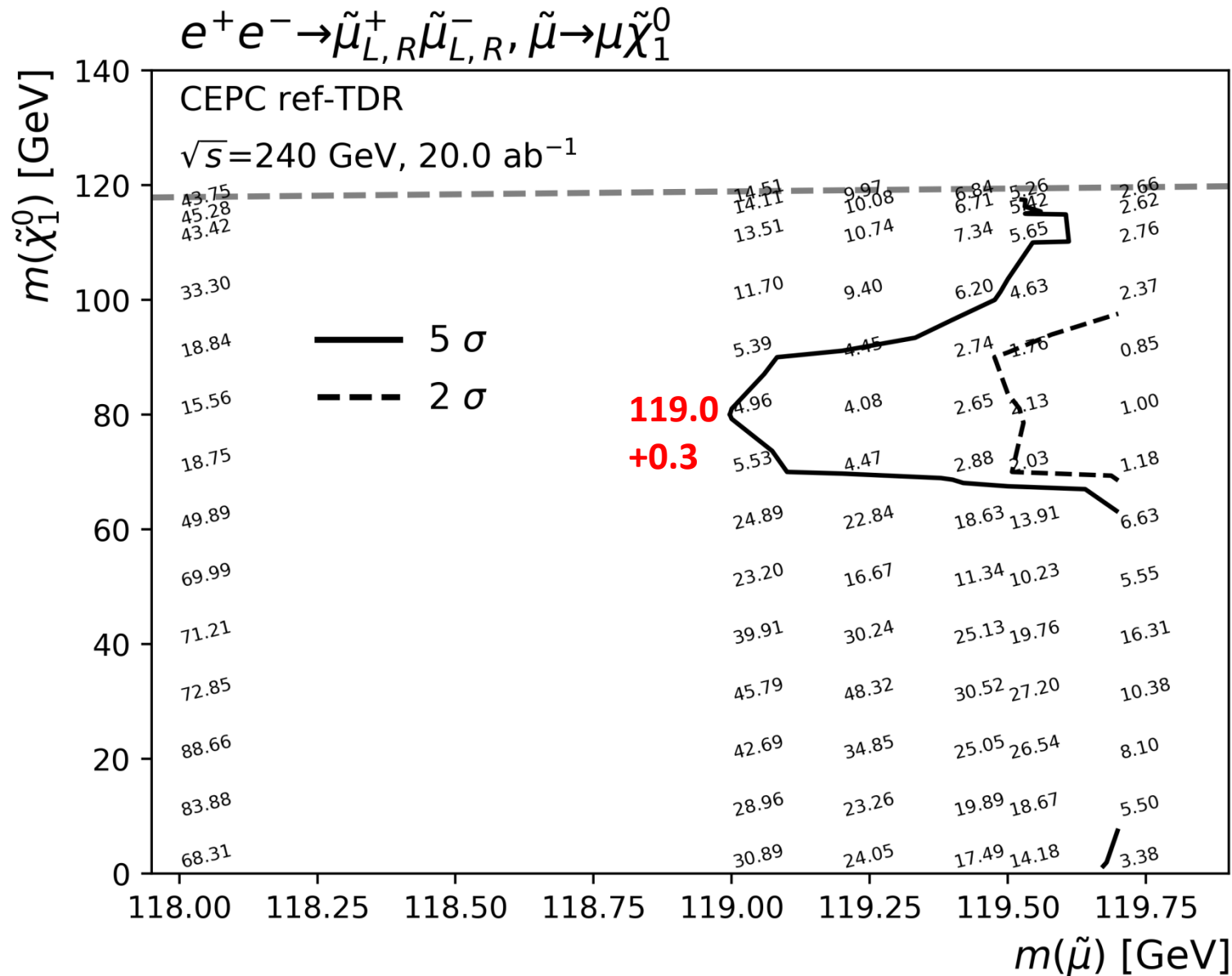
2115.62, 63.47,0.00, 0.00,1697.08, 50.91,328.50, 9.855,35272.26, 525.39,0.00, 0.00,40203.08, 522.54,91197.51, 814.20,27449.37, 453.85

4. 3% stat. \oplus 3% sys, no muid

3% sys is dominant

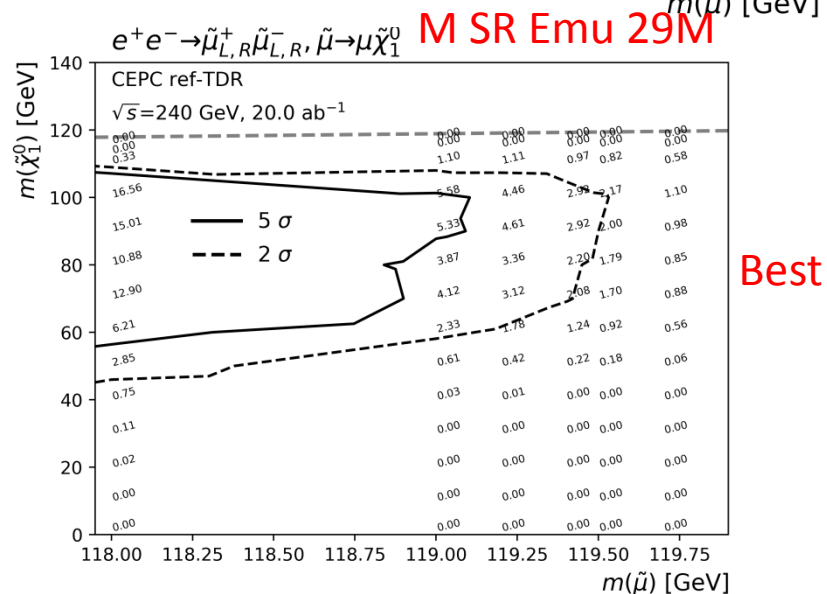
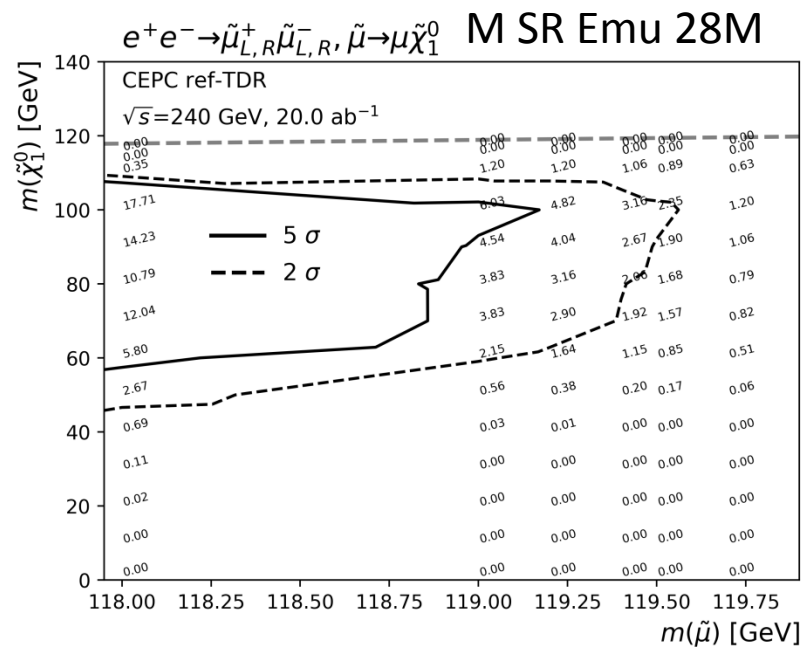
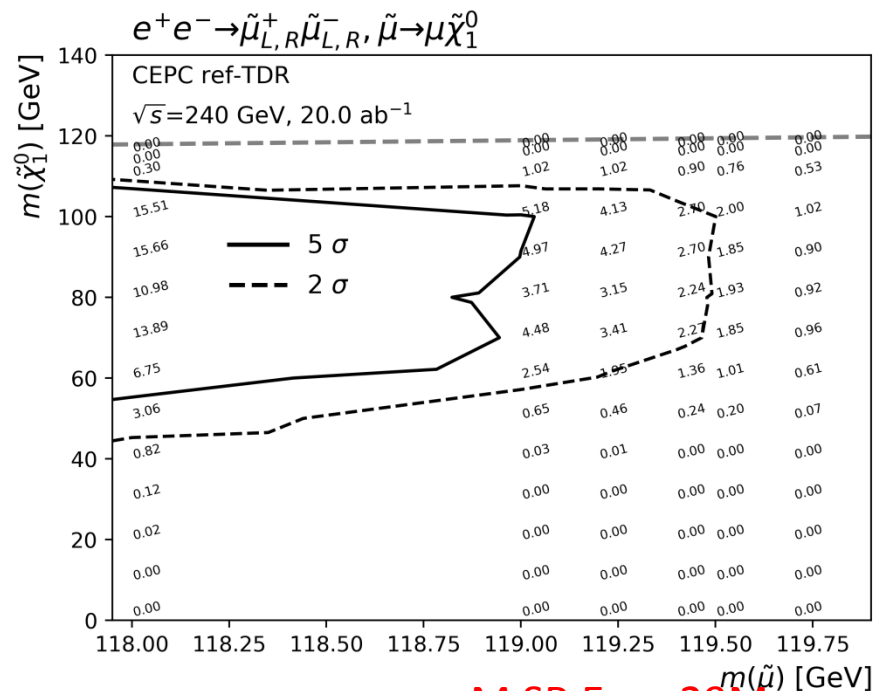
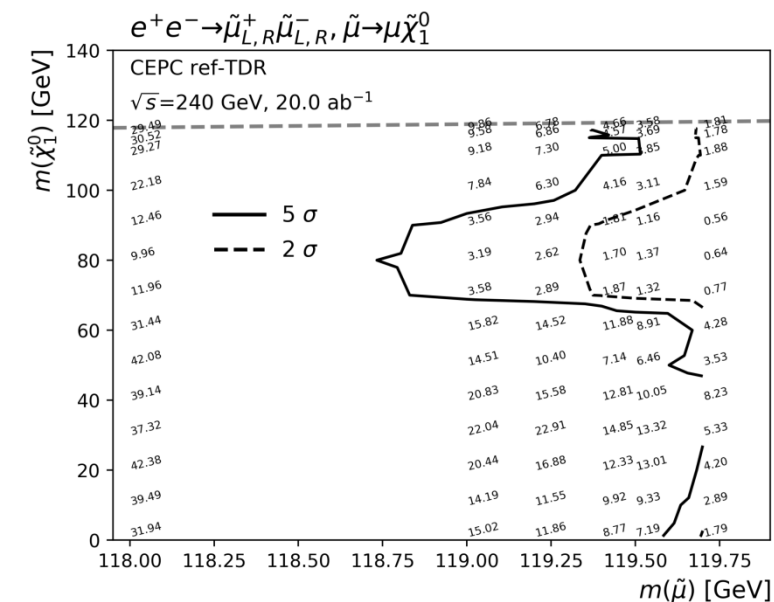


5. 3% stat. \oplus 3% sys \oplus muid 96% miud is not significant



M SR Emu 25M

Emu30GeV only M

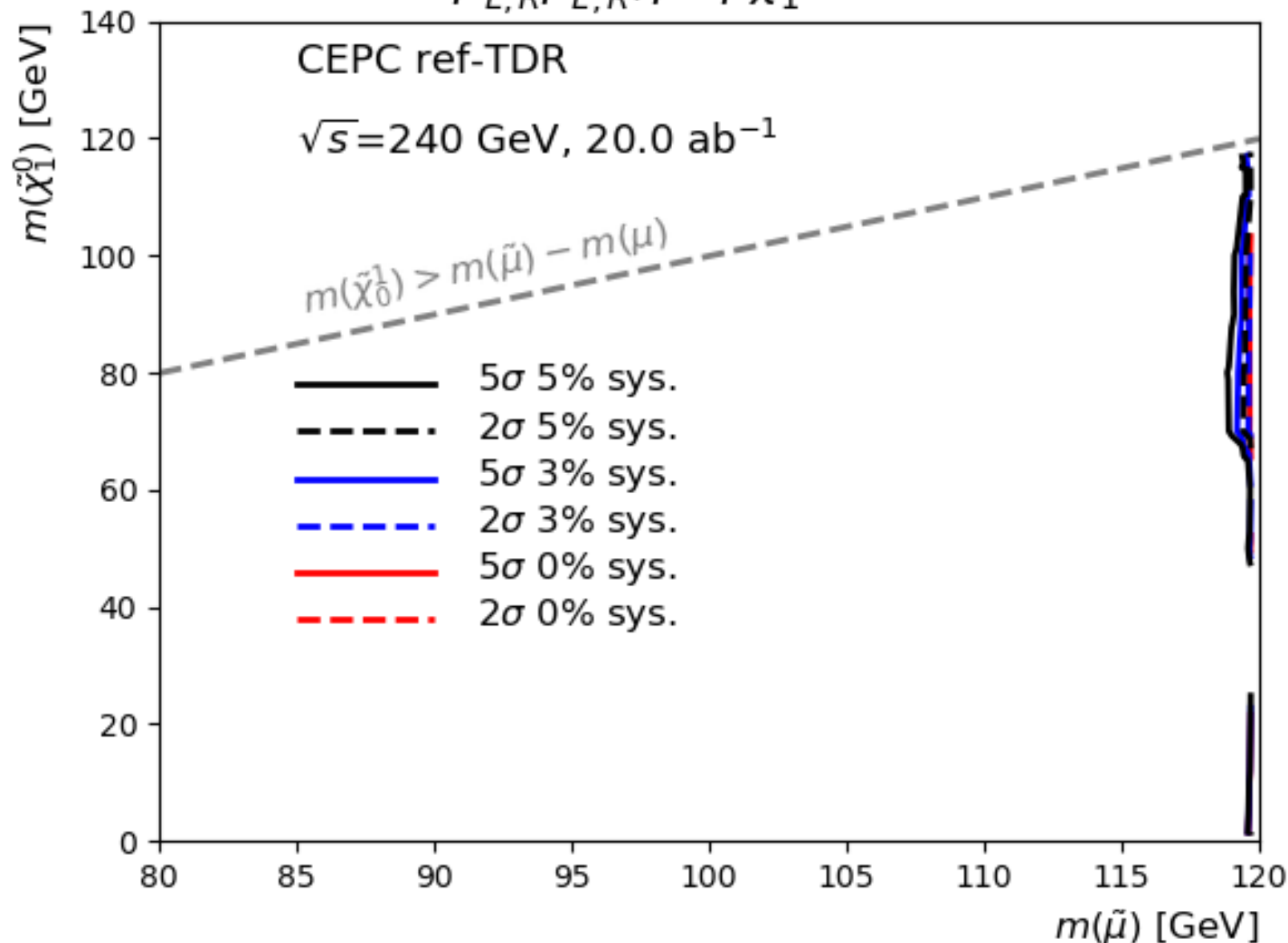


Final Result

$$e^+e^- \rightarrow \tilde{\mu}_{L,R}^+ \tilde{\mu}_{L,R}^-, \tilde{\mu} \rightarrow \mu \tilde{\chi}_1^0$$

CEPC ref-TDR

$\sqrt{s}=240$ GeV, 20.0 ab^{-1}



Final Result: Enlarged

