CMS data and their interpretation using the phenomenological MSSM

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1 Introduction

With the extremely successful performence of both machine and detectors at $\sqrt{s} = 7$

4. 3 trilinear couplings: $A_{b;t;}$,
5. 1 pseudo-scalar Higgs mass: m_A.
6. 1 parameter.

The parameters m_A and can be swapped for the Higgs mass parameters m_{H_u} and

We weight every pMSSM point with the product of the three likelihoods, one for each of the three analyses. Since the pMSSM points were sampled from a (bounded) uniform 19-dimensional density, the set of weights

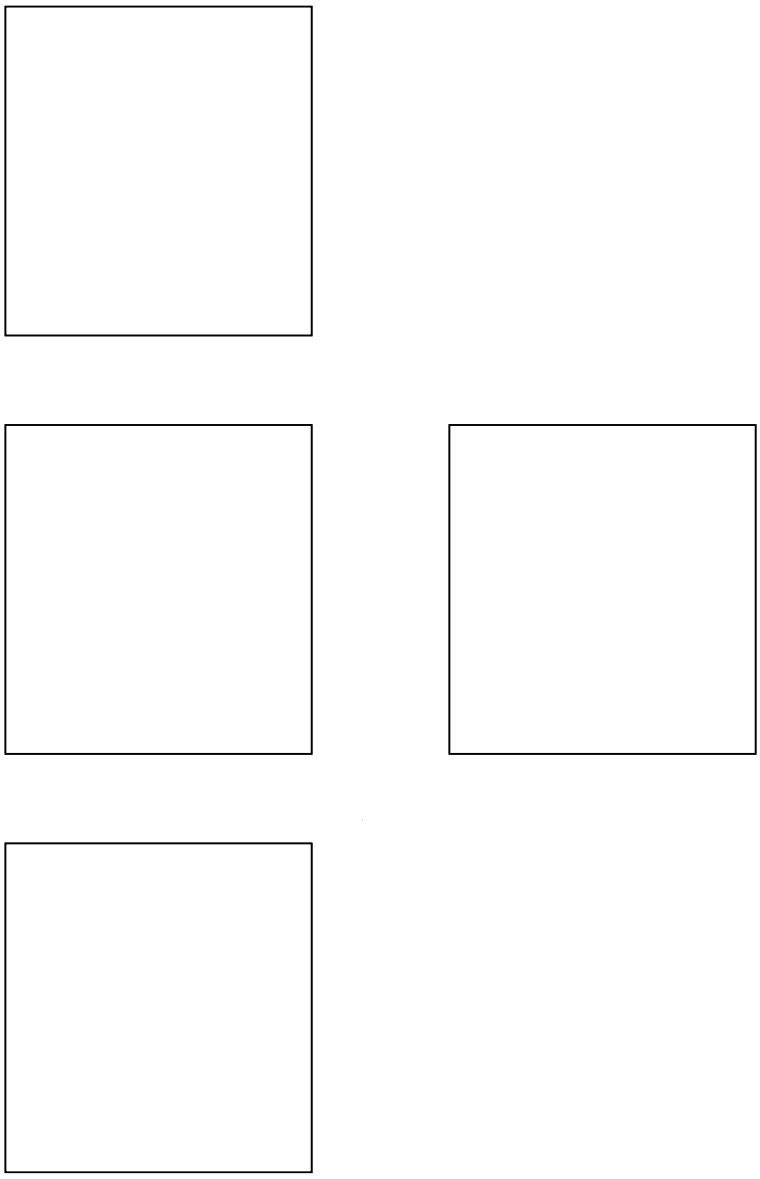


Figure 1: Ratios of profile likelihood L_p to maximum likelihood L_{max} shown for the squark mass parameters at SUSY scale. The colored and shaded histograms show the utions before and after the inclusion of the CMS results.

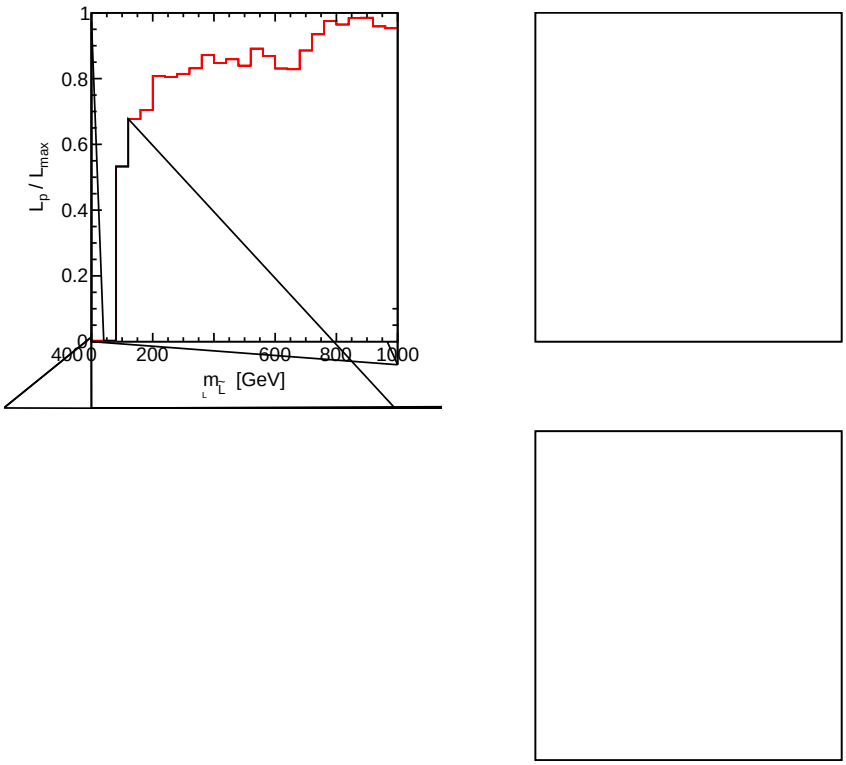


Figure 2: Ratios of profile likelihood L_p to maximum likelihood L

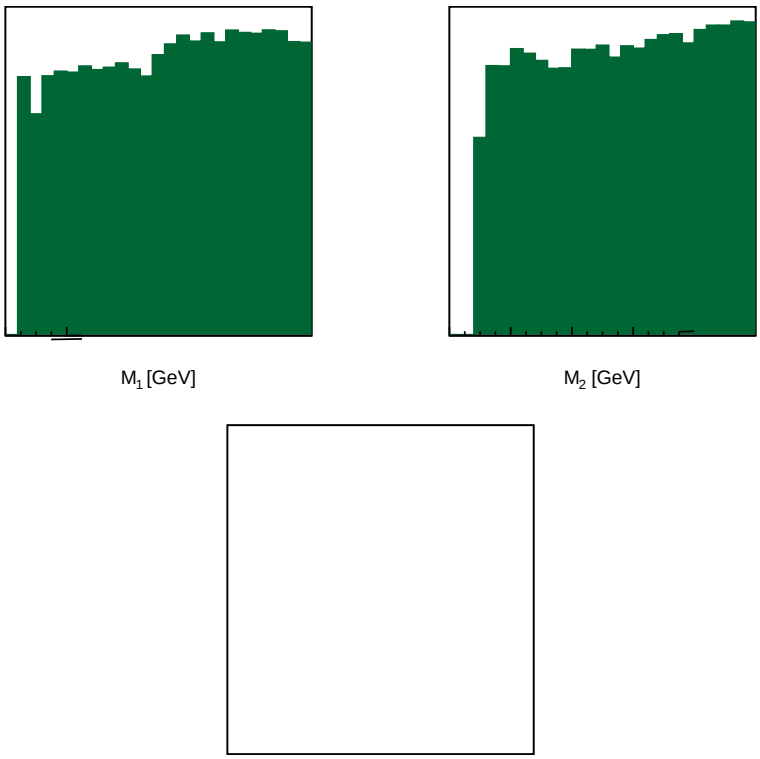


Figure 3: Ratios of profile likelihood L_p L

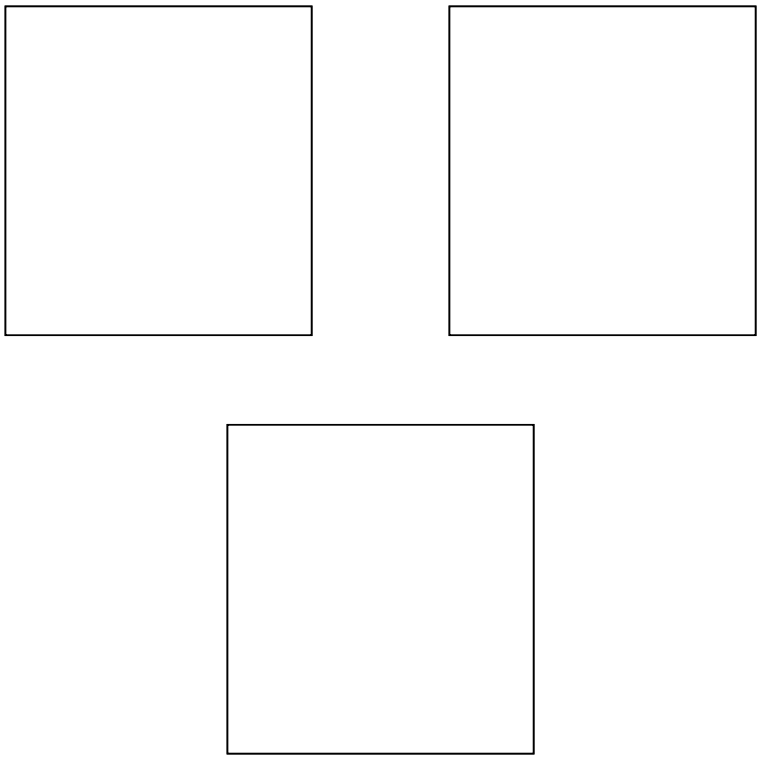


Figure 4: Ratios of profile likelihood L_p to maximum likelihood L_{max} shown for trilinear couplings at SUSY scale. The colored and shaded histograms show the distributions before and after the inclusion of the CMS results.

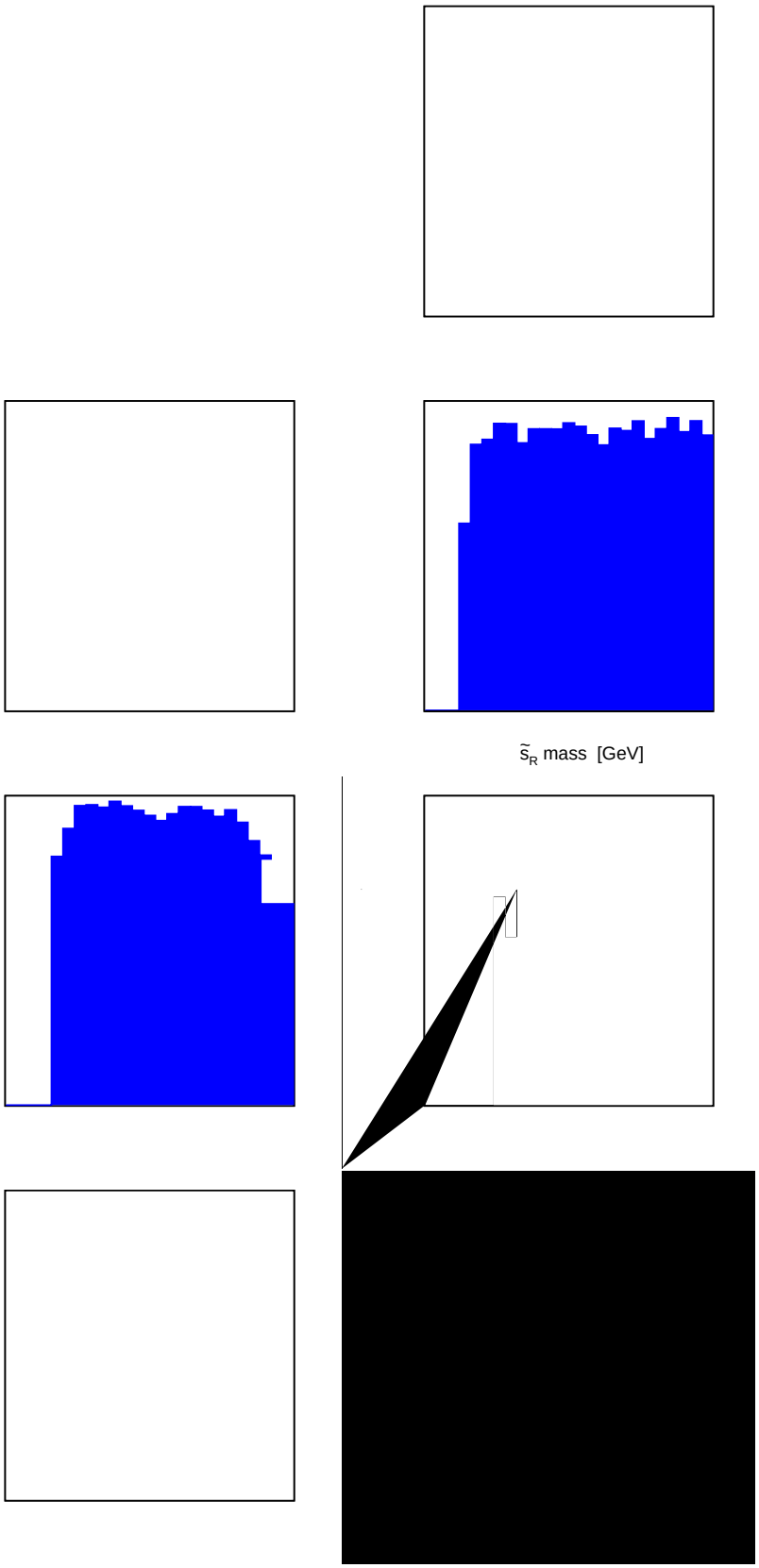
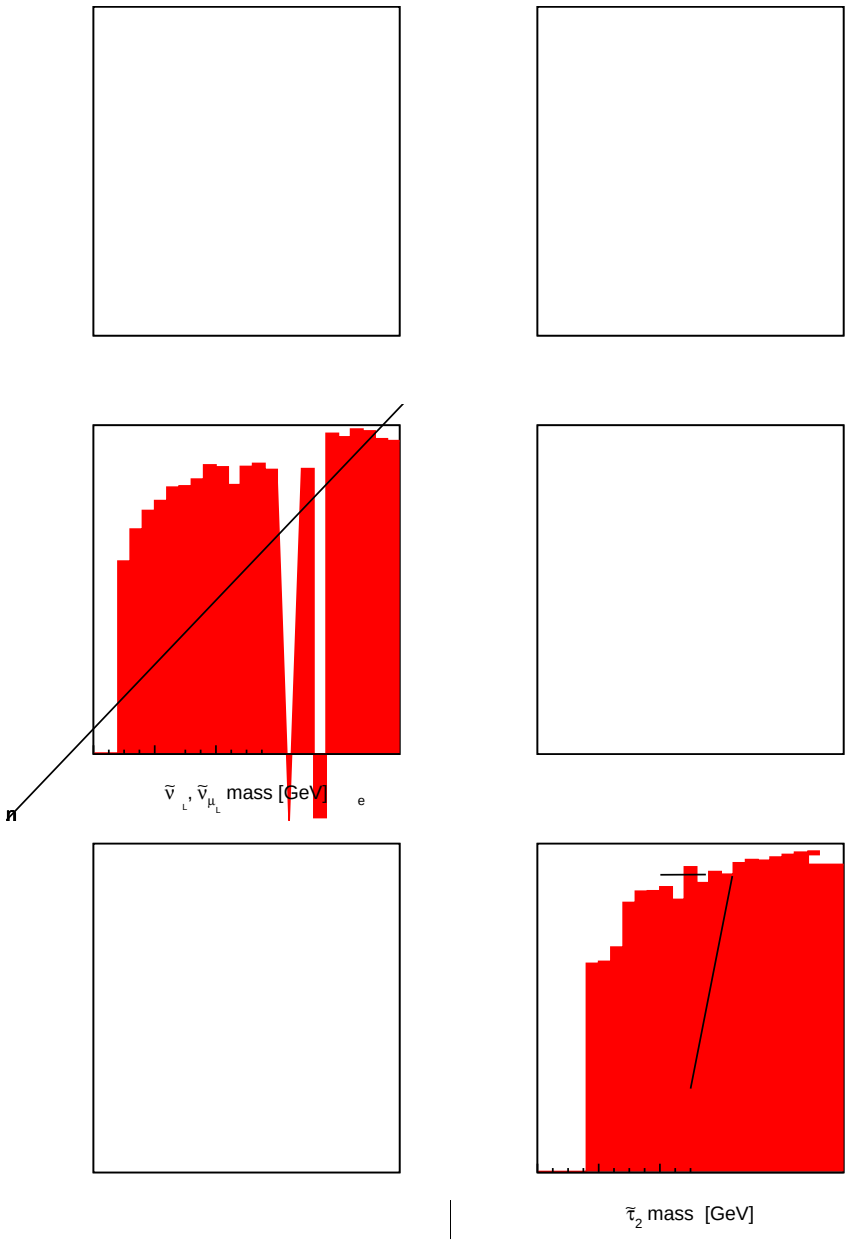


Figure 6: Ratios of profile likelihood L_p to maximum likelihood L



Figt57c666.492 00e866 155-351(Ratios0e866 of0e861(profil00e866 lik)10(elihood)]TJ/F1f 70.866 15515827068837c666L)]TJ/F10 0.7

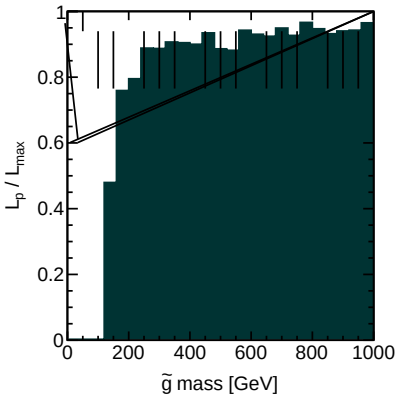

1
0.8
0.6
0.4
0.2
0
L_p / L_{max}
0
200
400
600
800
1000
$\tilde{g}$ mass [GeV]

Figure 10: Ratios of profile likelihood L_p to maximum likelihood L_{max} shown for chargino masses. The colored and shaded histograms show the distributions before and after the inclusion of the CMS results.

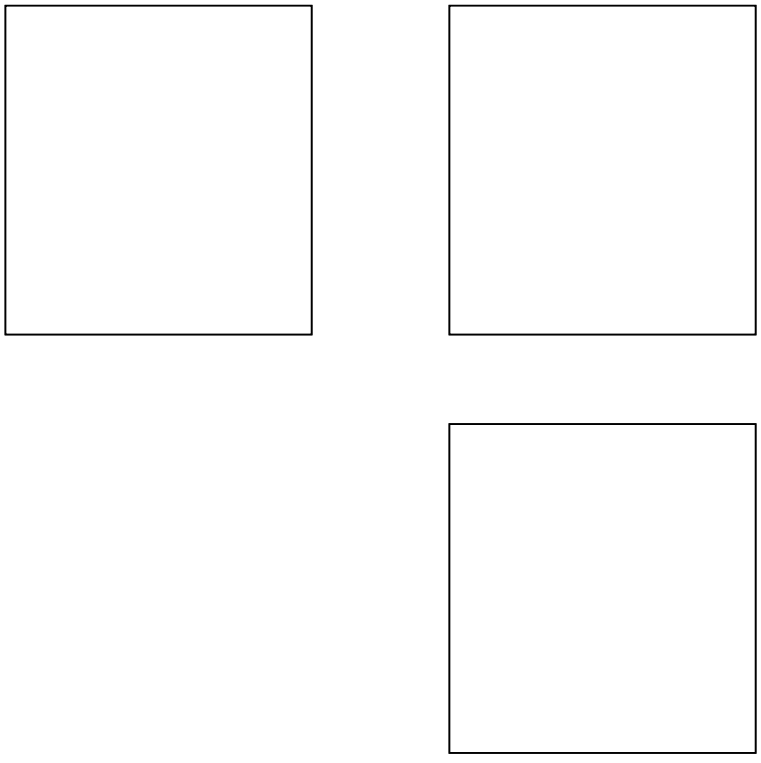


Figure 11: Ratios of profile likelihood L_p to maximum likelihood L_{max} shown for the Higgs masses. The colored and shaded histograms show the distributions before and after the inclusion of the CMS results.

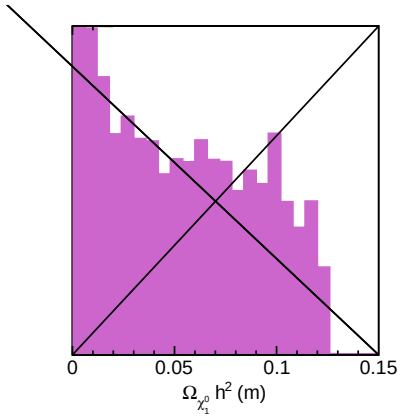


Figure 12: Ratio of profile likelihood L_p to maximum likelihood L_{max} shown for lightest neutralino dark matter relic density. The colored and shaded histograms show theutions before after the inclusion of the CMS results.

Figure 14: Ratios of profile likelihood L_p to maximum likelihood L_{max} shown for predictions for weak scale observables as calculated by superiso - I. The colored and shaded histograms show the distributions before and

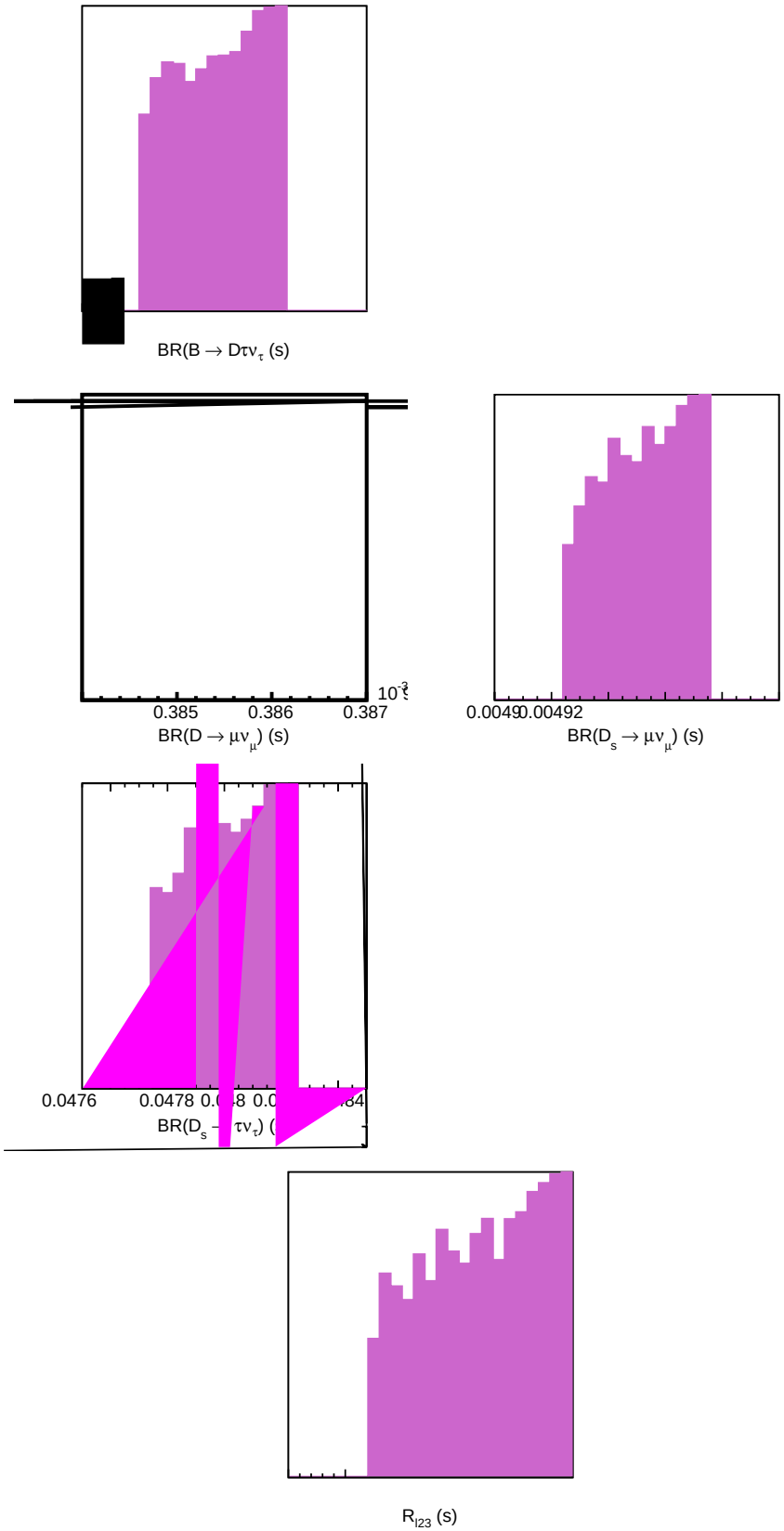


Figure 15: Ratios of profile likelihood L_p to maximum likelihood L_{max} shown for predictions for weak scale observables as calculated by superiso - II. The colored and shaded histograms show the distributions before and after the inclusion of the CMS results.

Appendix