



Latest scan results

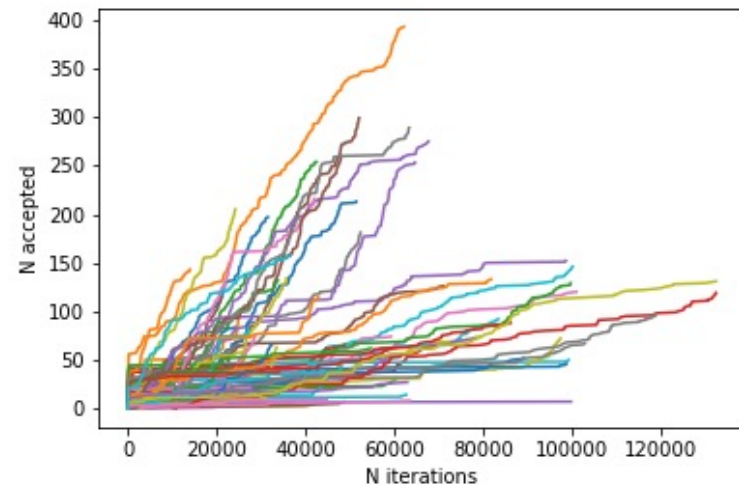
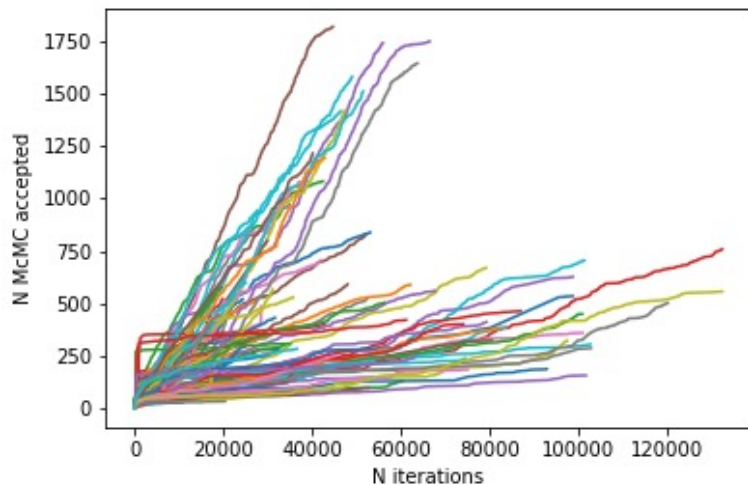
Jennet Dickinson

January 12, 2022

pMSSM Scan Meeting

Progress of the scan

- So far, scanned 5,617,746 points
 - MCMC accepted 61,240
 - 9,438 points passing all cuts (SModelS, Micromegas, HB)
- Plan to keep running until we are satisfied with the statistics
 - Job monitoring is low maintenance

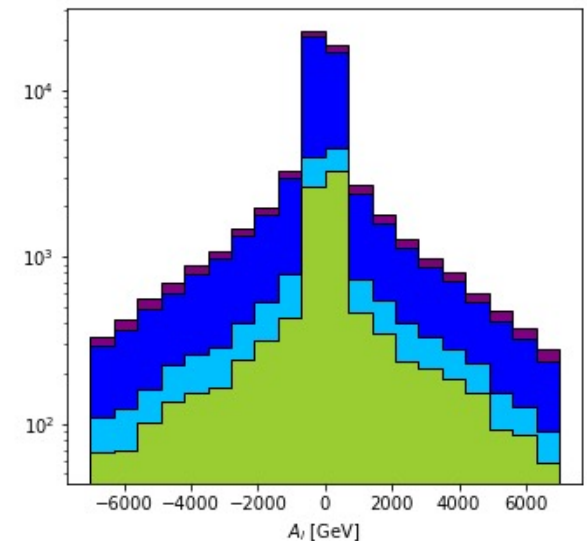
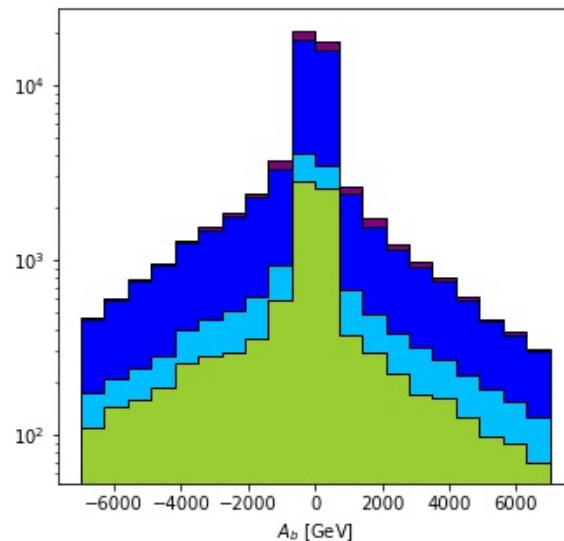
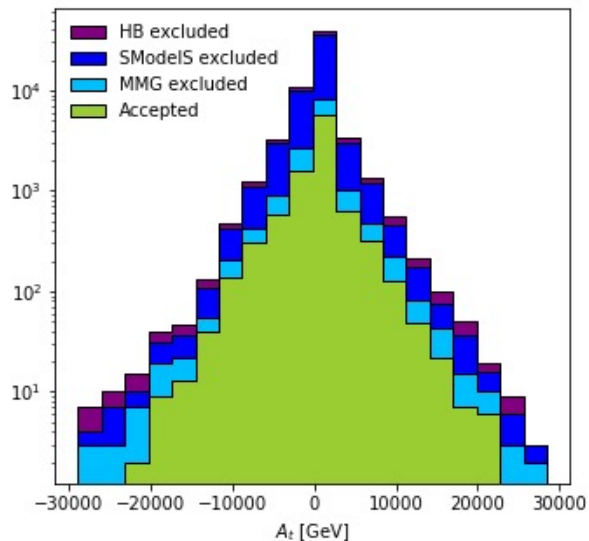


pMSSM parameters

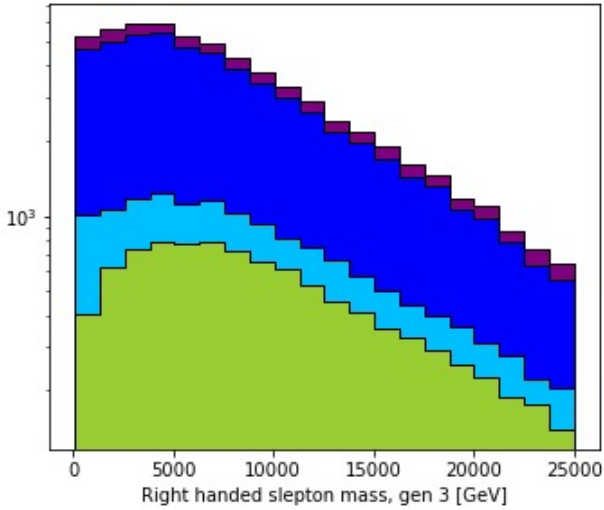
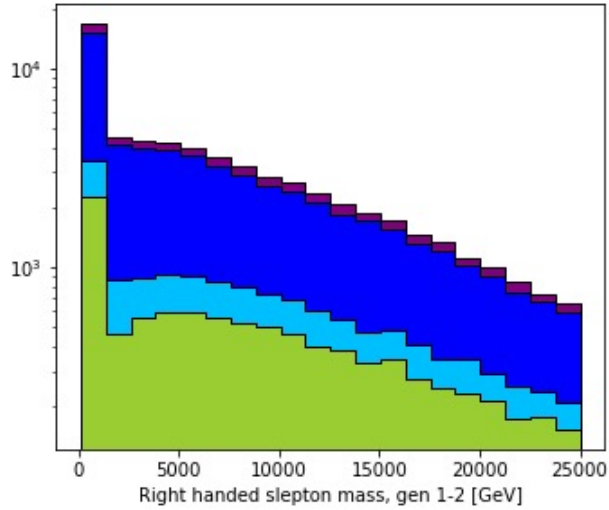
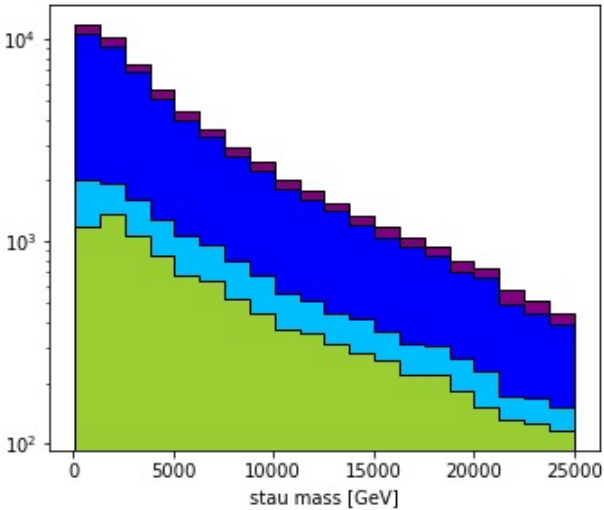
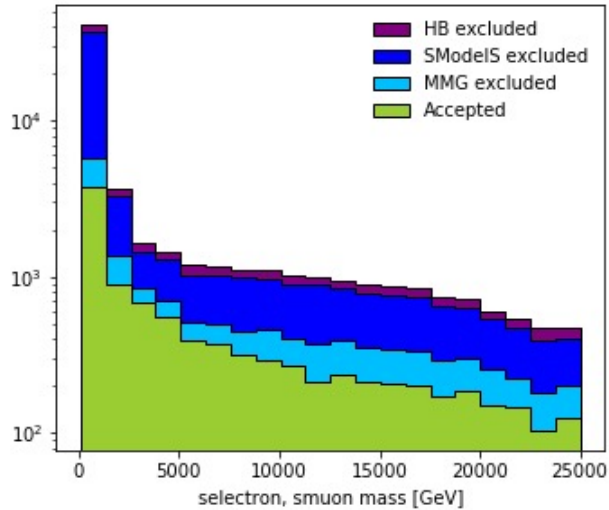
* Plots also include points from small test scans

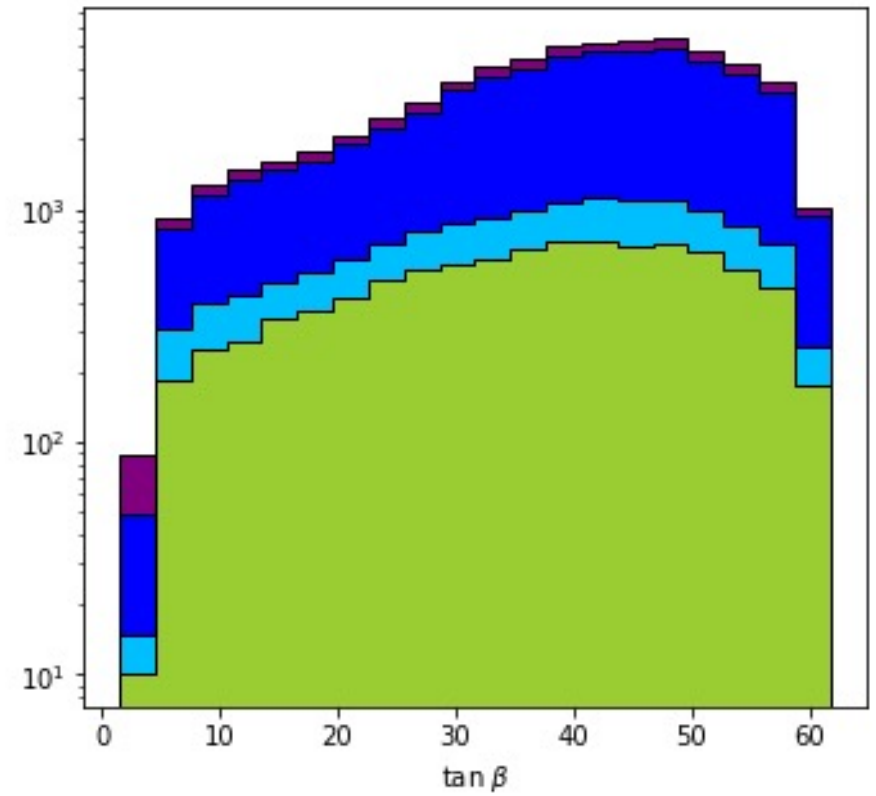
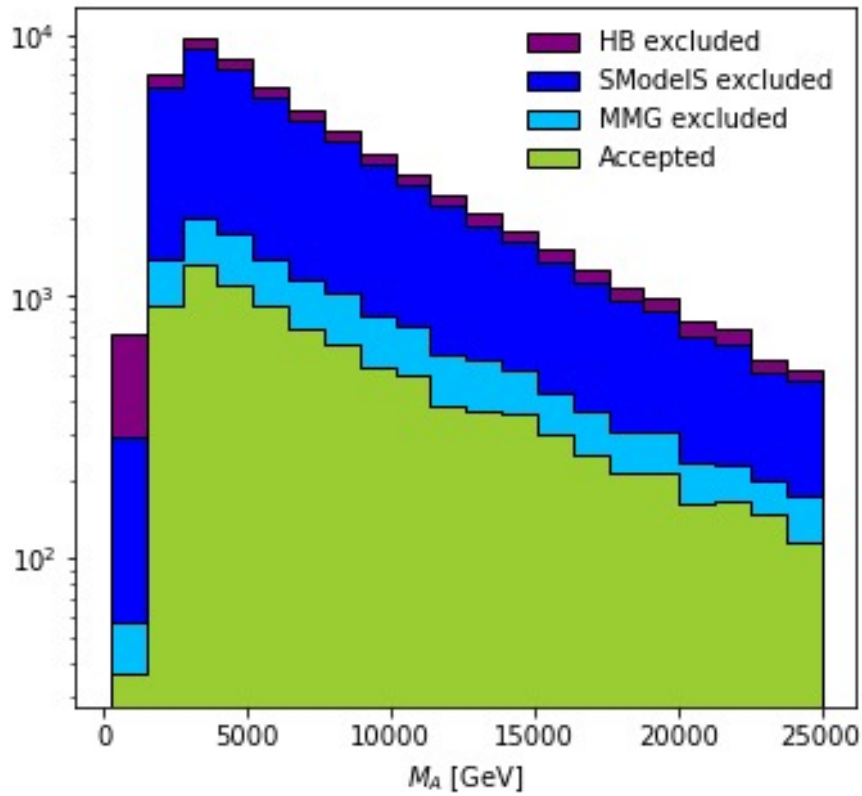
Trilinear couplings

- Legend is the same everywhere
 - Purple: excluded by HB
 - Dark blue: remaining excluded by SModelS
 - Light blue: remaining excluded by micromegas
 - Green: accepted

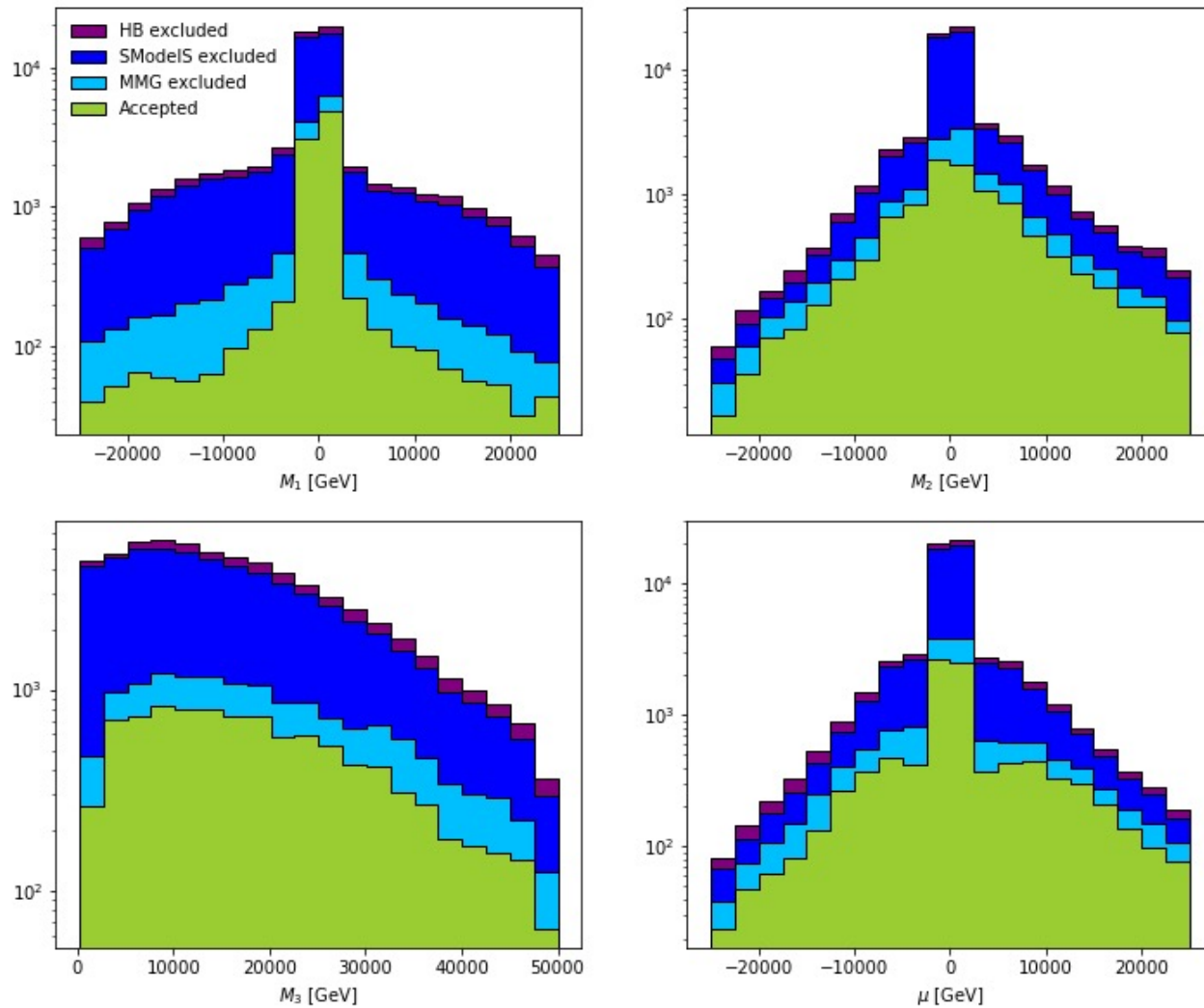


Slepton masses

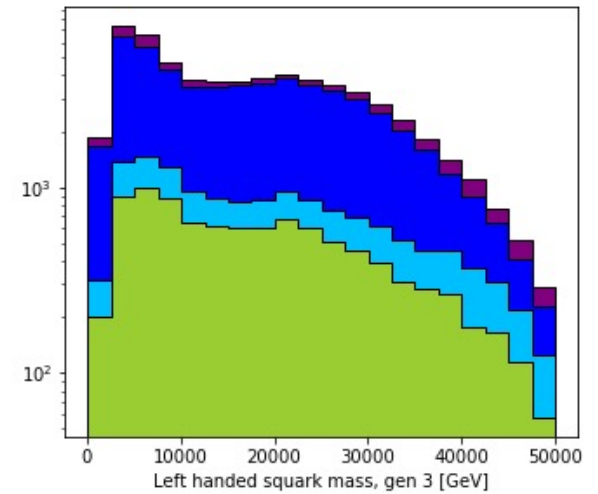
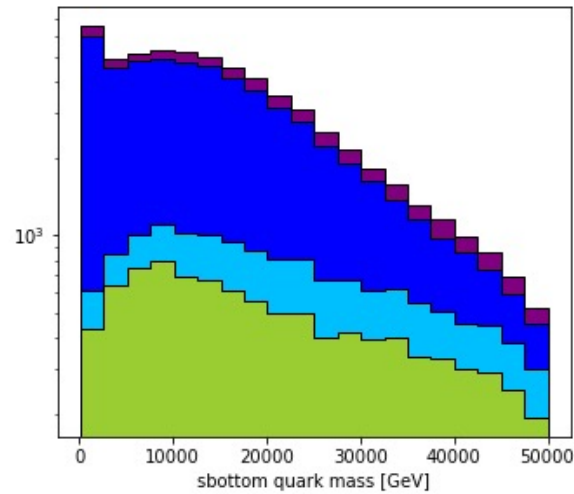
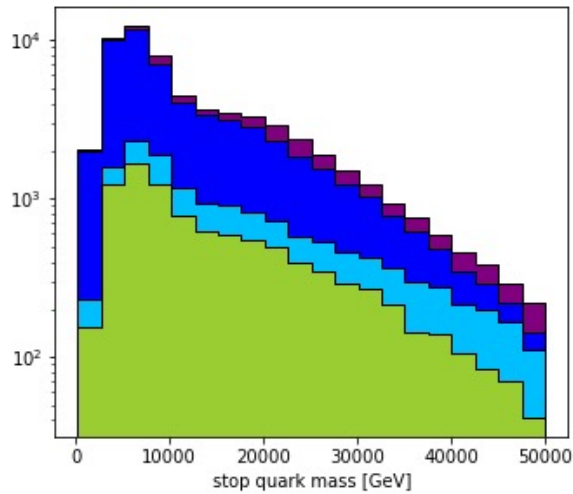
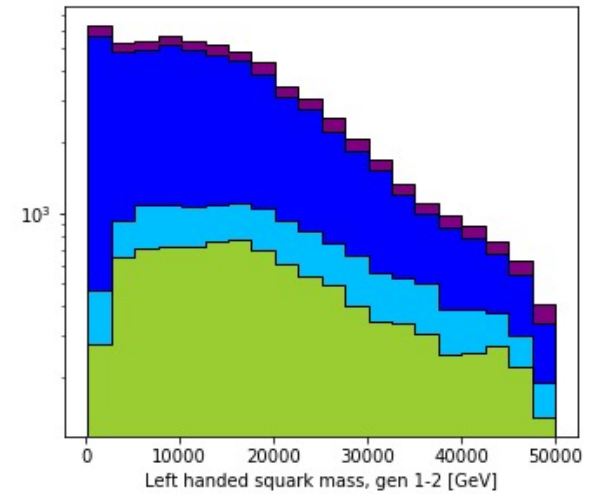
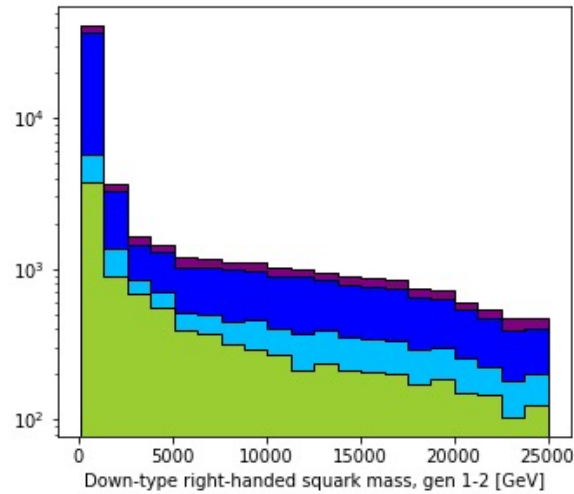
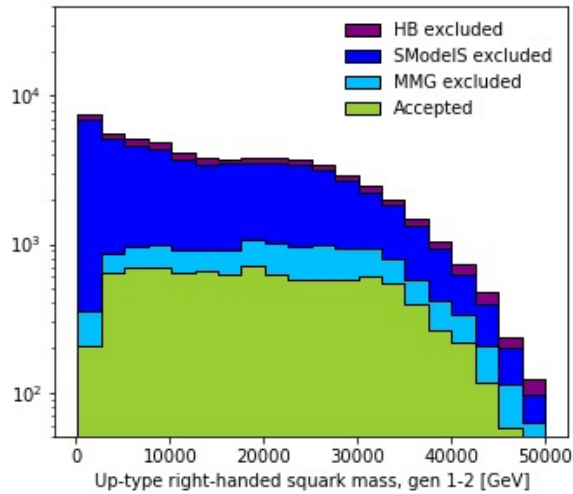




Gaugino mass parameters



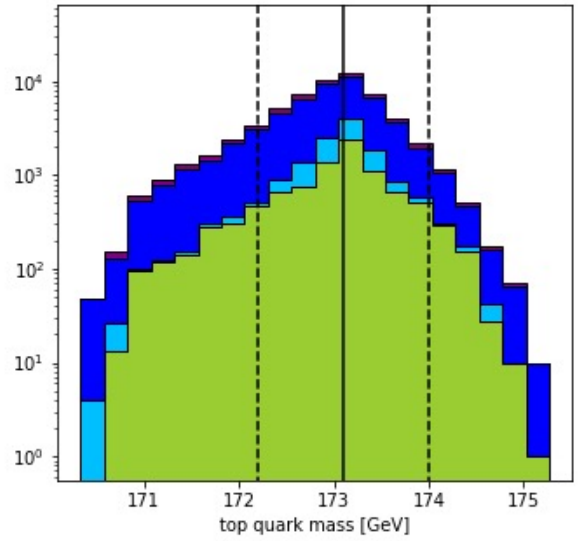
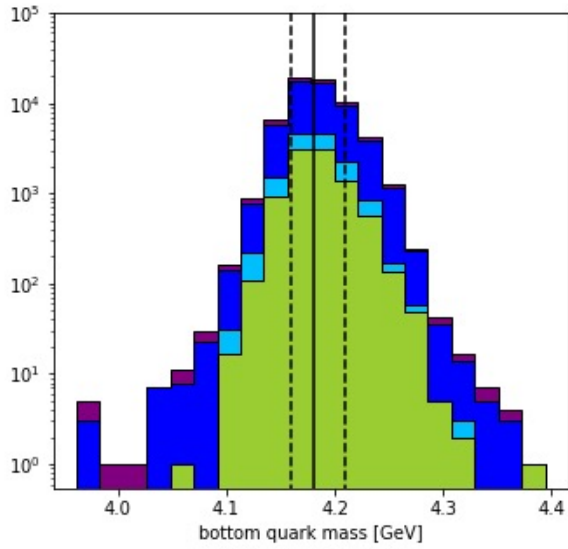
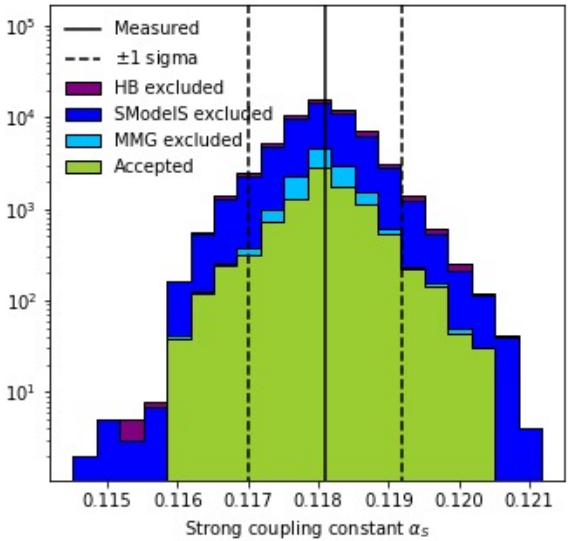
Squark mass parameters



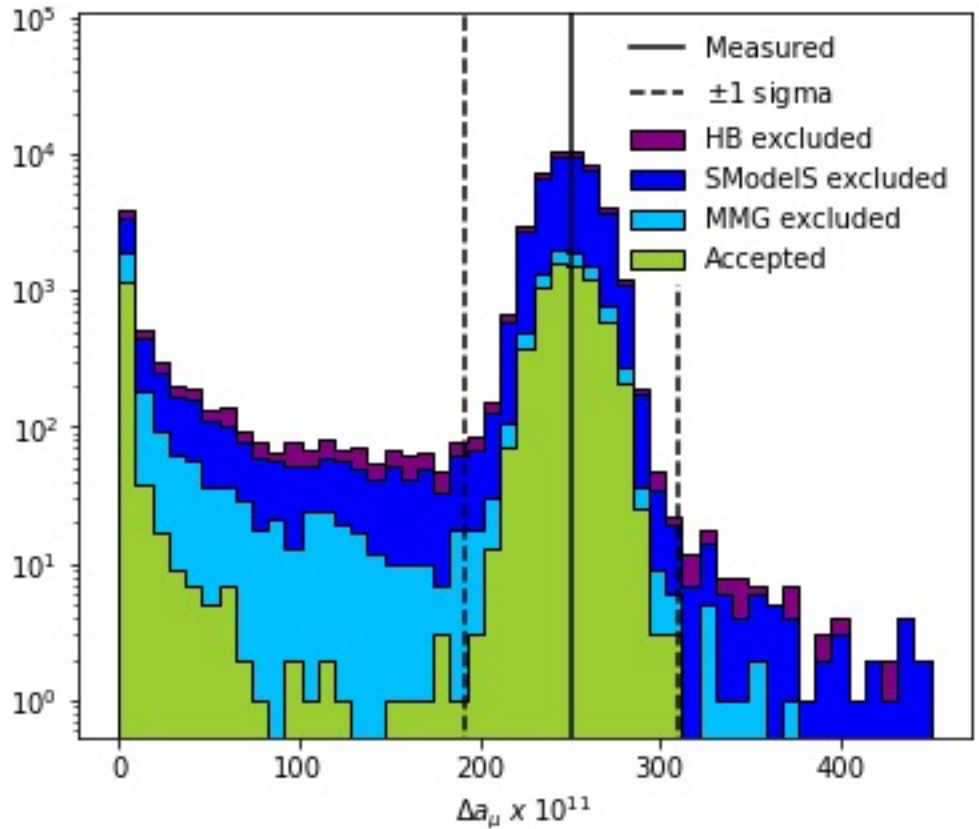
Calculated observables

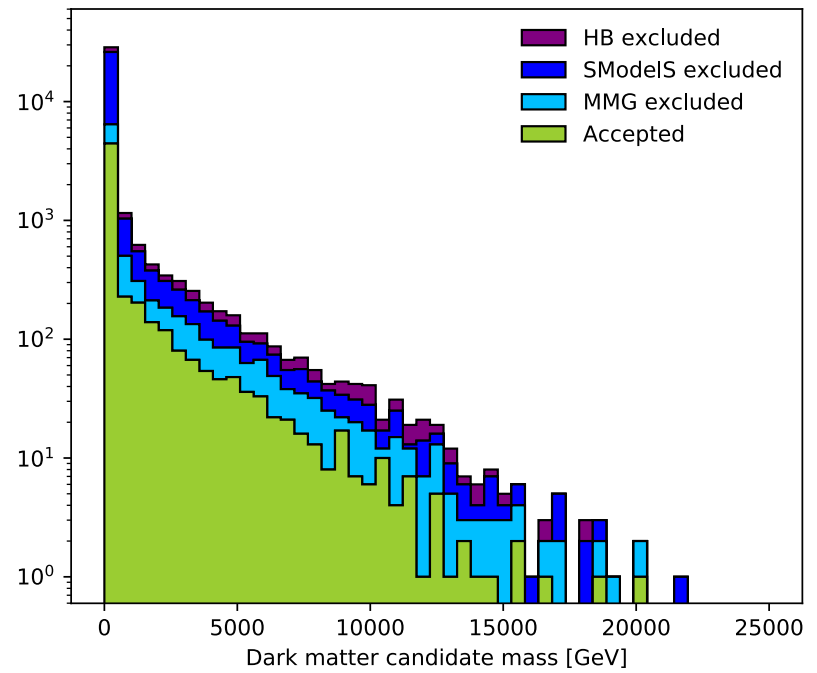
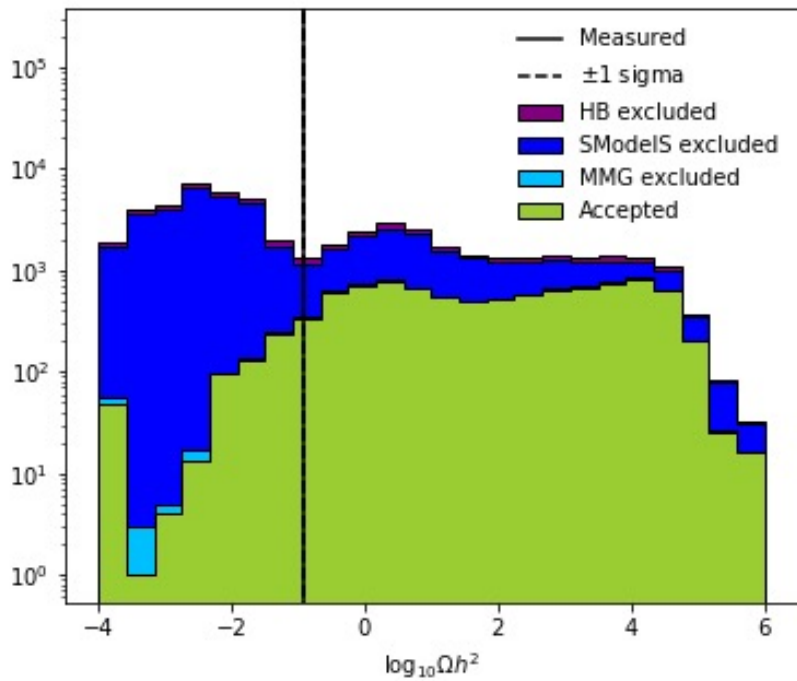
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Alpha S, top and bottom mass

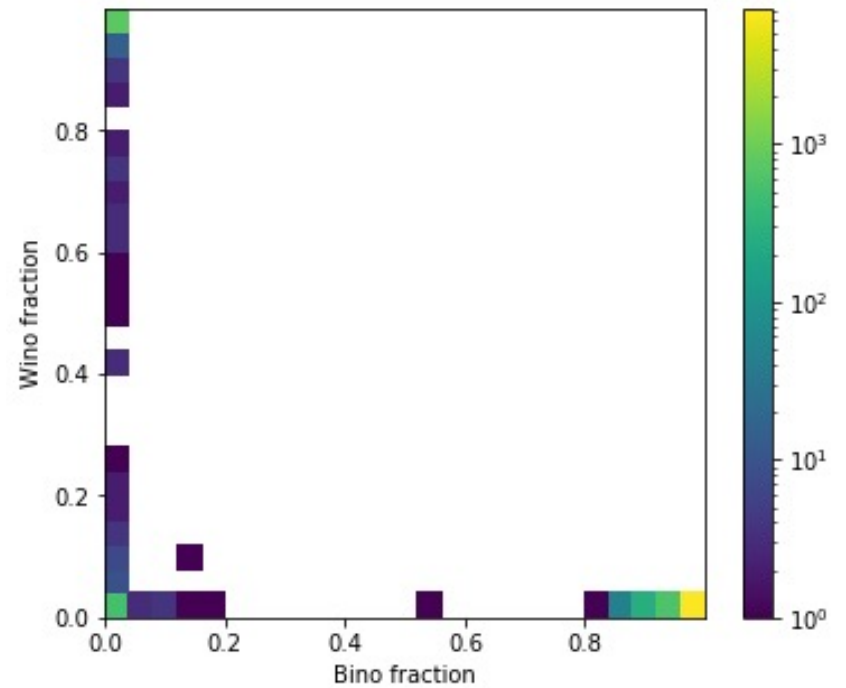
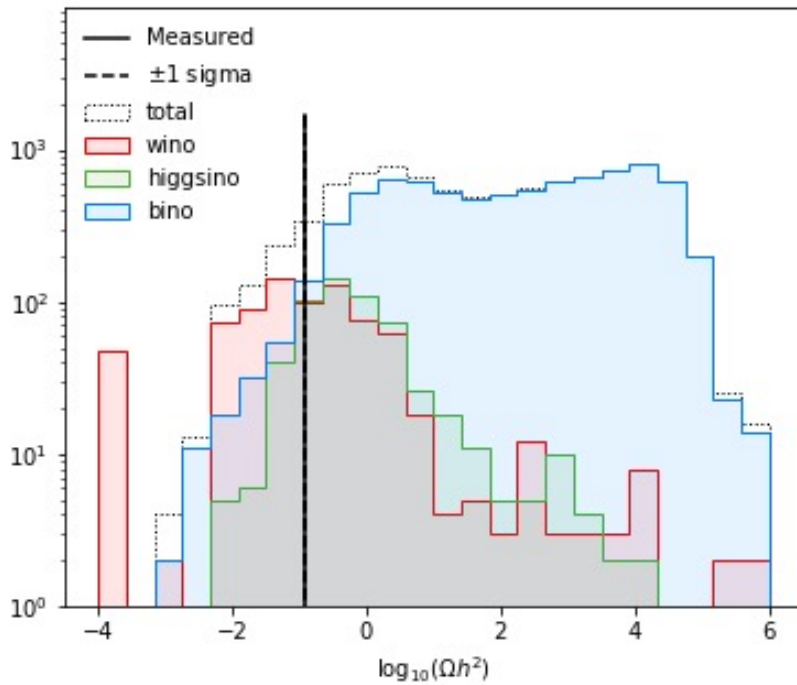


Higgs mass and delta a_mu





Dark matter



Conclusions

- The scan is ongoing, results so far look reasonable
- Work on event generation can already begin
- Documentation of the scan strategy mostly written up, to be circulated soon
- SLHA files contain decay information for each sparticle
 - Could re-run post-processing to add information about whether a point gives a long-lived particle signature