

Update on Paper and Cross-Checks

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Distribution of Clumps

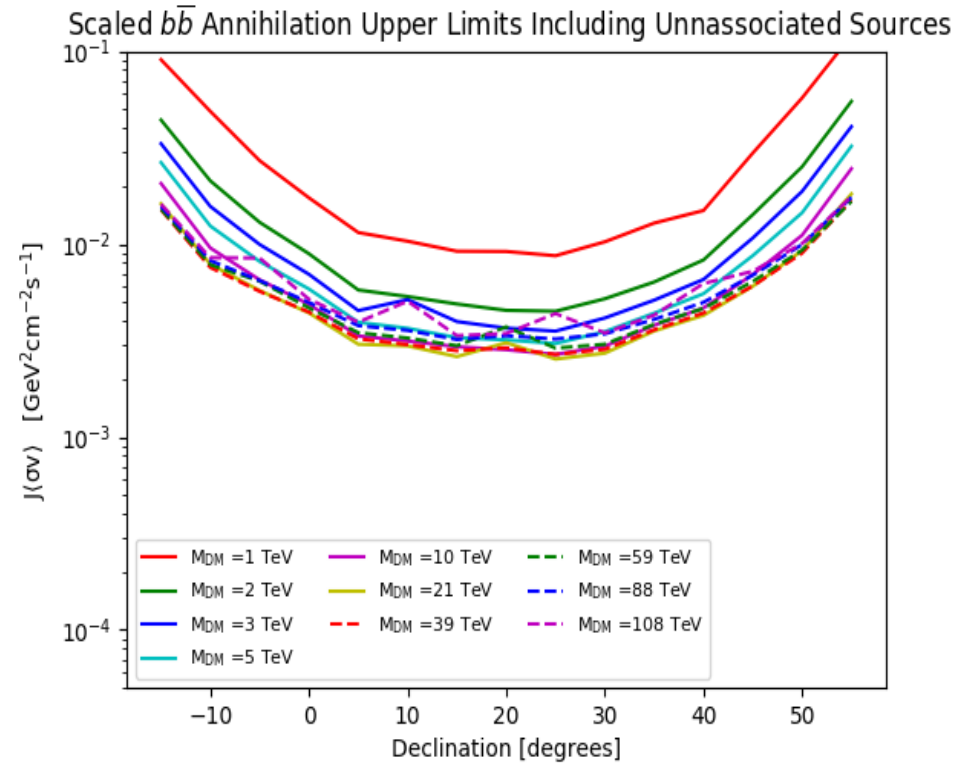
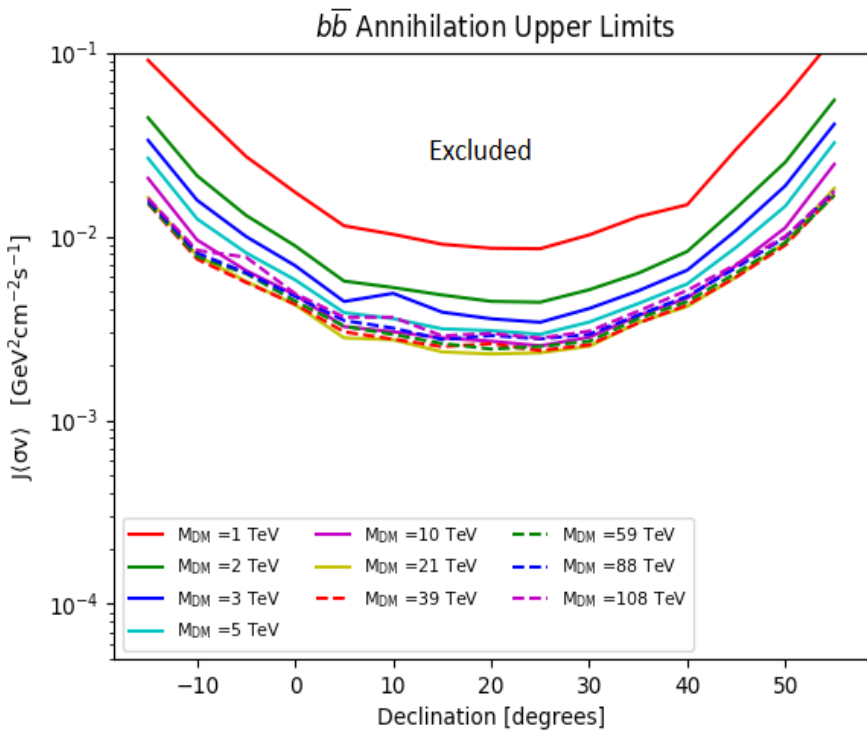
- How many dwarfs are observed at each mass scale vs predicted in CLUMPY?
- Looked at number in dwarf paper compared with CLUMPY output
- More discrepancy at lower J-factor
 - Makes sense: less massive, more likely to stay dark
 - Still missing about half at highest mass scale

J-summary

J	Observed Count	Average CLUMPY Count
$>10^{19}$	5	10
$10^{18}-10^{19}$	6	200
$<10^{18}$	4	~1500

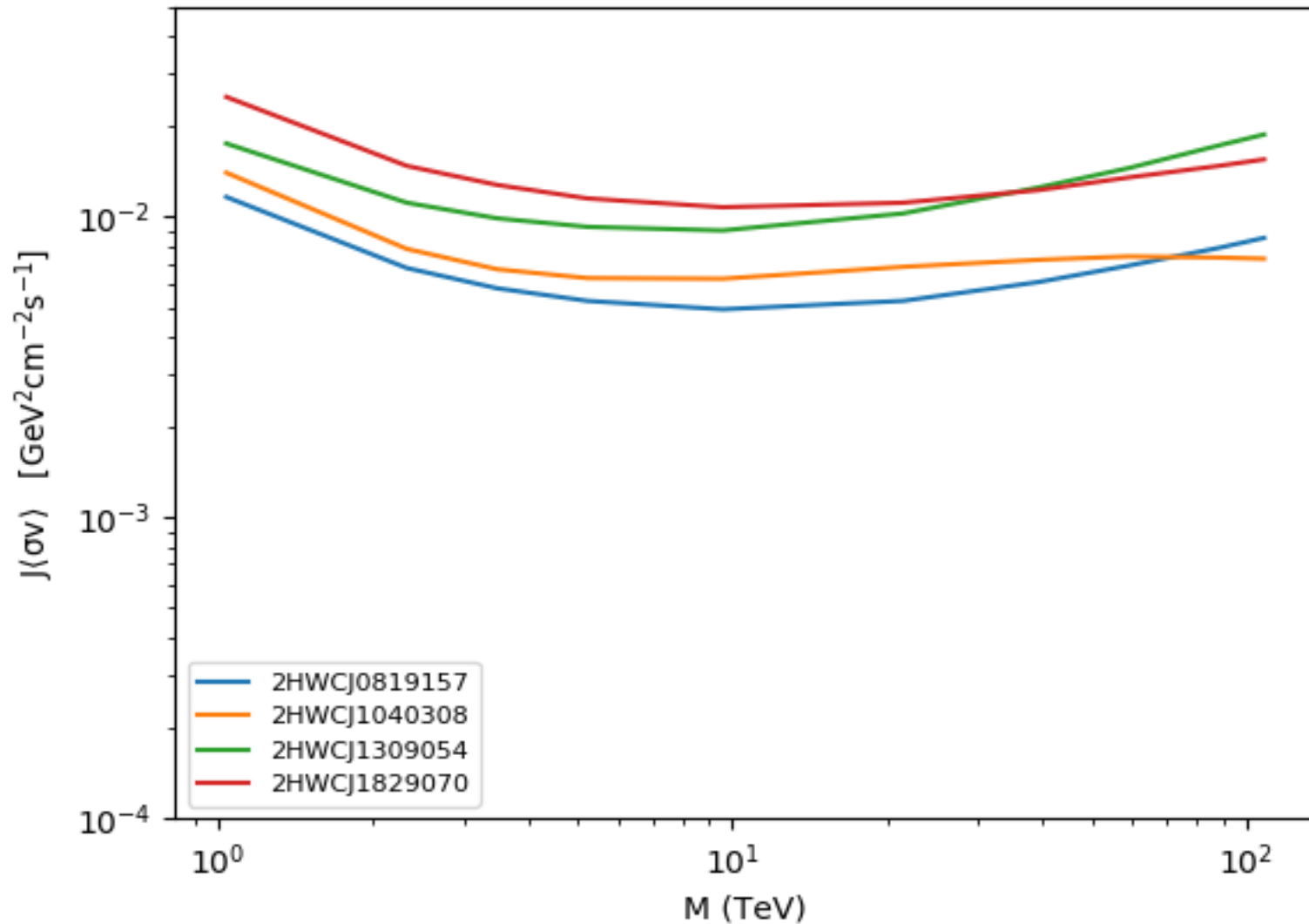
Limits at Unassociated Sources

- Sources with $TS > 25$ in catalog
- Checked for dark matter, inconclusive
- Can still set upper limits at those points
 - Won't be as constraining due to excess
- Set upper limits to see how they look when bright spots included
- Re-calculated characteristic limits in “worst case” scenario
 - If all $TS=25$ excess at fallen on grid points in one dec band
 - See how much this effects the limits



Side-by-side comparison of actual all-sky upper limits (left) and limits re-calculated with the unassociated sources artificially placed in the sample at each declination. The effects are minimal

$b\bar{b}$ Annihilation Upper Limits For Unassociated Sources



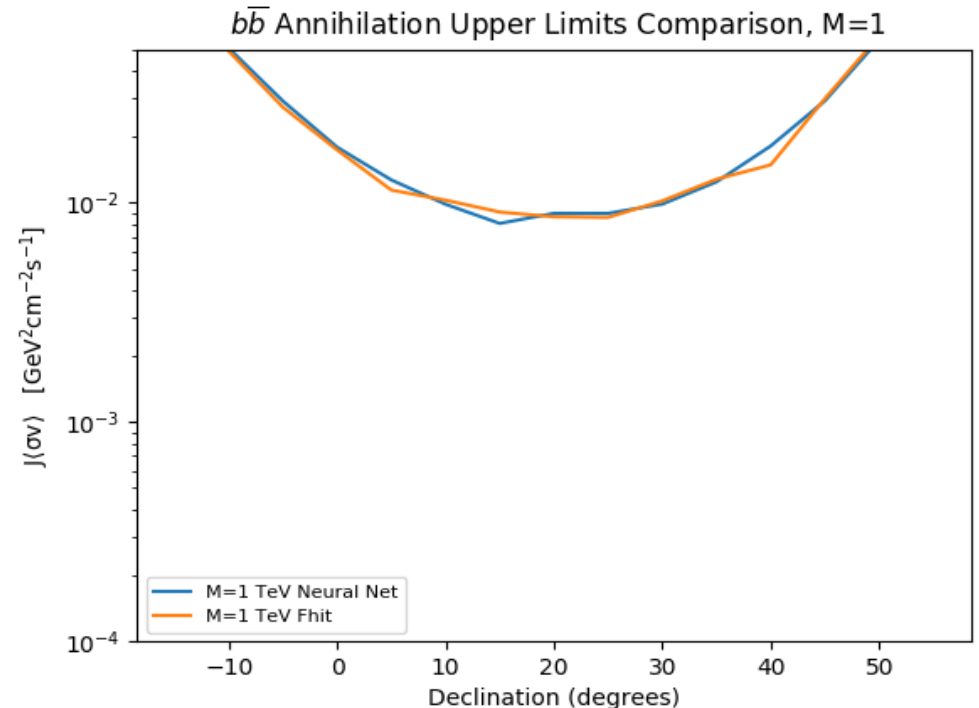
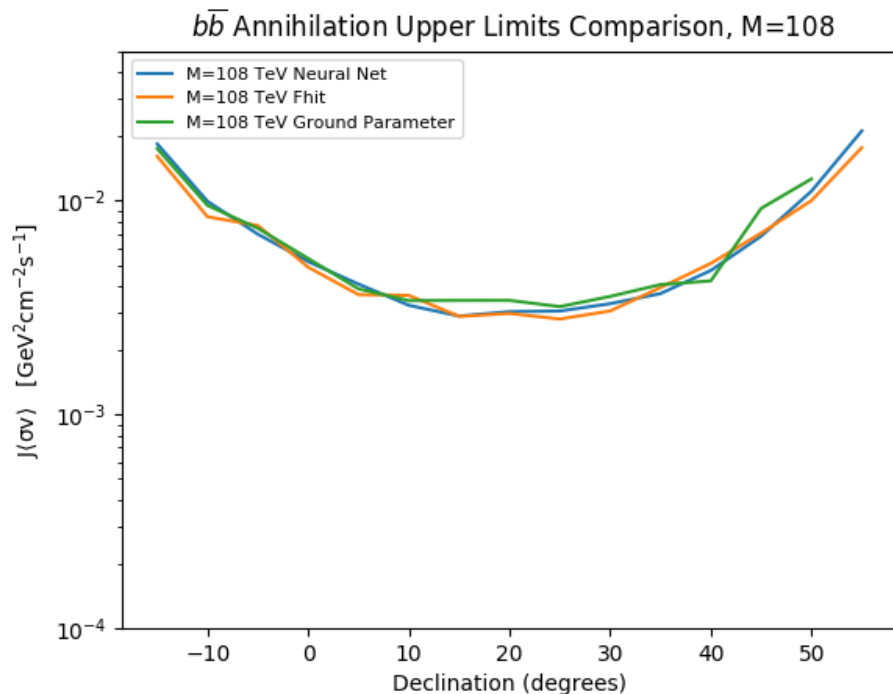
Quick Numerical Comparison

Characteristic limit at dec=15, $M= 10$ TeV: .0029

2HWCJ0819+157 limit at 10 TeV (dec=15.79): .0049

Energy Estimator Checks

- See if energy estimators improve sensitivity
 - More constraining limits
- Ran a few test cases, no significant effect at high or low mass



$b\bar{b} M_{DM} = 2\text{TeV}$ Limits With Uncertainty

