

## PBH Paper Suggestions

1. page 2, line 12  
“By evolving ... with a temperature inversely proportional to the black hole mass all available species of fundamental particles.”  
Are any words missing from this sentence?
2. page 3, lines 50-56  
“On the kiloparsec scale... component produced by interactions of cosmic-ray nuclei with the interstellar gas.”  
This sentence seems a little on the long side
3. page 5, line 127  
“The photons which are directly Hawking-radiated, not **those which are** the result of **other primary particle decays**, are visible as ...”
4. page 5, lines 130-134  
“As the evaporation proceeds to higher temperatures, the greater **the number of degrees of freedom for the emitted fundamental particle**, and the faster and more powerful **the final burst will become**. **The** details of the spectra **are** determined by the correct high energy particle physics model; **in** this work, we will assume the SEM as our emission and particle physics model.
5. page 5, line 135  
“The emission rate strongly accelerates as the black hole shrinks and **therefore** the remaining...”
6. page 7, line 165  
“To search for the emission from a PBH burst one needs to look for an excess **[of what?]** that **cannot** be explained by statistical fluctuations of the background.”
7. page 7, line 176  
“...for a 50% probability of detecting a 5 sigma excess **[no comma]** after a given number of trials, based on...”
8. page 7, line 82  
“Here,  $p_0$  is the p value corresponding to 5 sigma, **[while]**  $n_{bk}$  is ... ”
9. page 7, line 187  
“As an estimate, we **take**  $\mu_0$  ... is 50% ~~can be estimated~~ according to the relation:”
10. page 9, line 239  
“However, we detected two events...is strong enough to be considered as a detection.”
11. page 9, line 244  
runs over margin
12. page 9 Figure 2 caption  
“Milagro effective area parametrization ~~parameters~~ for various zenith angle bands.”

13. page 10, line 265  
“**According to** our results...”
14. page 10, line 266  
“For shorter durations, the Milagro data is starved for signal photons **[comma] where** for longer durations, the background ~~starts~~ **tends** to dominate the signal.”
15. Page 10, line 273  
“Milagro's successor HAWC is located at **[a]** higher altitude and features a-better detector design...”
16. page 10, line 276  
“In our calculations, all ~~the~~ relevant characteristics...”
17. page 11, line 280  
“air showers generated by ~~those~~ **these** particles...”
18. page 11, line 291  
“**When calculating the HAWC effective area for protons, the gamma-hadron separation cut was used to reduce background events, while the angle cut was not since the background is predominantly protons.**”
19. page 11, line 309  
“The factor 1.2 is a correction factor incorporating ~~the~~ other particle species in the cosmic ray background.”
20. page 13, line 319  
“Thus the total **number** of trials...”
21. page 13, line 321  
“In order to find the optimum set of cuts **[comma]** we performed a simple parameter search...the set of values which **give ...**”
22. page 13, line 325  
“we performed cuts on all ~~the~~ parameter combinations...”
23. page 14, line 338  
“...durations  $\tau$  (**assuming negligible dead time**).”
24. page 14, line 340  
“The PBH limit for each parameter combination **was** calculated using Equation 10 and the set of cuts that gives the best limit for a given burst duration **was** selected.”
25. page 14, line 344  
“...with the associated background counts and number of trials **factor**.”
26. page 16 caption  
“...and **were** obtained based on the PBH Standard Emission Model.”