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PHYS 512 – Assignment 4

Question 1:

When I first ran the code, I obtained a X^2 value of 15267.94, with 2501 degrees of freedom. I calculated its p-value using scipy.stats.chi2.sf ( ). The p-value was so small (to the order of 10^{-300} or less), that it was rounded to $p = 0$.

When I changed the parameters to $[69, 0.022, 0.012, 0.06, 2.1 \cdot 10^{-9}, 0.95]$, I obtained a X^2 value of 3272.21, with 2501 degrees of freedom. This yielded a p-value of $1.149 \cdot 10^{-23}$.

Since we are testing for the p-value of X^2, a higher p-value is better ($p > 0.05$). While both of the above results indicate a terrible fit, the p-value associated with the second set of parameters clearly indicates a better fit than that of the first set of parameters. Nonetheless, neither of these fits are acceptable.