

Vega Hitti

260 381 396

PHYS 512 – Assignment 4

Question 2:

For question 2, I used Newton's method to estimate the best-fit parameters. This yielded the following parameters:

$$[68.9999, 0.0220378, 0.119835, 0.0599999, 2.10259 \cdot 10^{-9}, 0.950002]$$

The errors on the above parameters are:

$$[3.36008 \cdot 10^{-4}, 5.67094 \cdot 10^{-7}, 3.30533 \cdot 10^{-5}, 4.11797 \cdot 10^{-2}, 1.78652 \cdot 10^{-10}, 5.94315 \cdot 10^{-3}]$$

The χ^2 value of this fit is 82,638,974.826, with a p-value of $4.678 \cdot 10^{-20}$. Obviously, this fit remains unacceptable, but it is somewhat better than the fit from question 1 (where the p-value was $1.149 \cdot 10^{-23}$).

Lastly, I have included some code that writes all of the above information in the file "planck_fit_params.txt".