

EP 4130/PH 6130 Take Home Assignment

Deadline **5 April 2020** before **17:00 hrs**

Total Weightage = 10 points

Neutron Lifetime data is available in <http://iith.ac.in/~shantanud/lifetime.dat>. Explanation of the columns is given in the first line of the file. Plot a histogram of neutron lifetime measurements by splitting the data into 20 bins. Assuming that the statistical and systematic errors are uncorrelated, calculate:

- Sample Arithmetic mean
- Sample Weighted Mean
- Sample Median
- Error in Weighted Mean
- σ_G of measurements
- Error in Median

Also do a Shapiro-Wilks tests of Gaussianity for the neutron lifetime measurements (report the p -value).