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Fitting PMT Responses with an Artificial Neural Network[1]
WILLIAM KEMMERER, GABRIEL NICULESCU, James Madison Univ — Correctly modeling the low light responce of photodetectors such as photomultiplier tubes (PMT) is crucial for the operation of particle detection relying on the Cherenkov effect. The **G**as **R**ing **I**maging **Ch**erenkov (GRINCH) in the Super-BigBite Spectrometer (SBS) at Jefferson Lab will rely on an array of 510 29 mm 9125B PMTs. To select the tubes for this array, more than 900 were tested and their low-light response function was fitted. An Artificial Neural Network was defined and trained to extract the relevant PMT parameters without carrying out a detailed fir of the ADC spectrum. These results will be discussed here.

[1]NSF

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