

Mississippi QuarkNet Report 2021

On June 21 we conducted a one day workshop on Neutrino physics. Several teachers and faculty attended including distinguished guest Ken Cecire. We began with an introduction to the standard model and neutrino physics. Teachers Denise Byrd and Martha Mills presented *Carbon Dating* and *The Discovery of the Neutrino*. We delayed a discussion on Neutrinos from the Sun by Dennis Reed who could not attend. In the afternoon Dr. Gavin Davies discussed how neutrinos are identified in a DUNE-like or NovA-like neutrino detector.

On July 19 we met again in a one day workshop where we discussed the importance of Planck's constant h and how it is now the mass standard. We then made a measurement of Planck's constant. The teachers were provided a circuit board with LEDs and power supply. Teachers measured the activation voltage V_o of each color LED and determined Planck's constant with the formula $hf = eV_o$. Here f is the central emission frequency of the LED. We delayed a discussion of Dark Matter until our next meeting workshop.

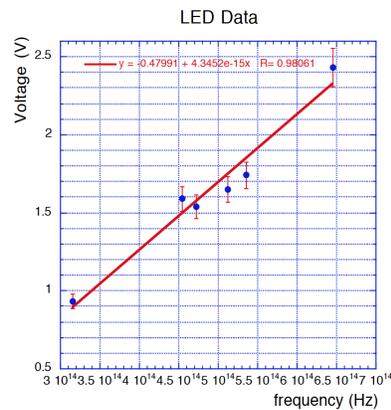


FIG. 1: Meeting photo and LED data, slope= h/e .