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The first week after beam time, we spent a lot of time taking final bits of data, cleaning up, and planning for next week's analysis. Over the weekend we continued to fill the germanium detector to keep it ready to record data into next week. Tuesday through Thursday we continued to take data, this data is for the efficiency calibration. It is important for the efficiency calibration that the source is in the same location as the target was in order to calculate the efficiency of our detector during the beam time. This was done by taking apart the beam line, placing the source onto the target position, and then recording data for a few hours. The sources we used were Europium-152 and Barium-133. Barium-133 has lower energy level photopeaks which will be useful for analyzing the efficiency of the lower 99 keV peak from Dysprosium-158.

During this time we also began cleaning up. This included counting and returning all of the cables and equipment that we had borrowed over the last few weeks. All areas of the H-Course were cleaned up and everything was returned by Friday afternoon.

We also finalized an analysis plan. We plan to analyze any gain differences between runs, and correct the peak positions if they are off in any way. After this correction we plan to add the data together for similarly configured runs, to provide the best possible statistics. Then we will complete the energy calibration using Europium-152. The energy calibration has already been completed, but it was seen that the energy calibration is not linear at higher energy levels, and is rather a second order function. This will be taken into account for the future energy calibrations. We will check our data and compare it to the background data as well as the activity run taken after beam time. Then after the efficiency calibration, we plan to fit the efficiency vs energy curve to find the efficiency of the dysprosium peaks we observed.

We also plan to investigate possible compton suppression of our data, to hopefully improve the quality of the data overall. Finally, we plan to attempt to see the coincidence between the peaks. We have the event data, and in order to see coincidence, we have to be clever about our coincidence conditions. Seeing coincidence between gammas allows us to create our own experimental level scheme and compare it to the theoretical level scheme. With this defined level scheme, we can then calculate the moment of inertia for the nucleus.

Next week includes all of this analysis, as well as preparing for our final presentation on July 26.