Blumberg
NO. 18

AGS Studies

1 May 1973 : 1630 – 1800

Since reinstalling the multiplexor switch used for HEBT emittance measurements, results have been obtained which seemed anomalous. This study period was to be devoted to checking the linearity of response for each of the 30 multiplexor channels, in the presence of linac beam radiation. However, the test voltages fed into the multiplexor were not received properly by the computer, and it became evident that there was a hardware malfunction other than non-linearity.

On the maintenance day (2 May 73) it was discovered that the relay, which switches from Horizontal to Vertical inputs in the multiplexor, was not functioning

due to an altered cable connection made when the multiplexor was at the linac. This was repaired, and the linearity test performed, although not in the presence of linac radiation.

The average non-linearity for individual channels is 6.4%, with extremes of 18% and 1.6% in channels 23 and 12 respectively. The gains of the individual channels vary by +9.2% and −8.0% from the mean. These extremes also occur in channels 23 and 12 respectively.

The multiplexor is probably satisfactory for obtaining emittance parameters now. When it is moved out of the ring, we should be able to improve its performance considerably

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