NEW METHOD OF OBSERVING NEUTRON MONITOR MULTIPLICITIES

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We have recently augmented the electronics in our neutron monitor (NM) latitude survey station to record the elapsed time (dT) between counts from each proportional tube. This data is used to study the different characteristics of the dT distribution and count multiplicities as a function of rigidity cutoff and primary spectrum. These observations also provide the opportunity to quantify the count rate reduction from using a longer dead-time (as used by the Russian NM stations) and a preliminary analysis of our data suggests the NM detection energy dependence to primary cosmic rays is strongly coupled with dead-time longer than 20 micro-seconds. The results of Monte Carlo calculations are also shown and are compared to these observations.