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Results from the new titanium wired harp at the Spallation Neutron Source*

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A new harp has been installed in the Ring To Target Beam line (RTBT) section of Spallation Neutron Source. The Harp is made of two planes with 30 titanium 50 micron wide wires each plane. The narrow, low-Z wires versus the 100 micron tungsten wires of the original harp, are to minimize the beam scattering. This harp will be both a backup and a complement to the existing harp further downstream. The newly created data-acquisition system is also suitable to replace the existing's harp data-acquisition system, now over 20 years old. We show the use a of cRIO platform as a cost-effective way to process many channels and sample the beam profile at the full 60 Hz beam repetition rate. We also describe the performance of the titanium wires. A passive analog board is used to lengthen the signals to allow sampling at <= 10kS/s/ch. The data is acquired by the FPGA, passed on to the real-time OS, LabVIEW RT, and through the SNS EPICS Channel Access server presented to the control room.

Footnotes

Funding Agency

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