Contribution ID: **531** Contribution code: **TUPB102** Type: **Poster Presentation**

Test results of an improved multi-dimensional Bunch Shape Monitor

Tuesday 27 August 2024 16:00 (2 hours)

RadiaBeam has developed and built a Bunch Shape Monitor (BSM) prototype for measuring the longitudinal bunch distribution in hadron linear accelerators. The device has been designed to operate at 402.5 MHz and it incorporates three main innovations to improve its performance: a focusing field between the target wire and the entrance slit for better collection efficiency, a novel design of the RF deflector to enhance beam linearity, and a moving mechanism that allows shifting both the wire and deflector cavity to enable transverse profile measurements. The BSM prototype has been installed at the Beam Test Facility at the Spallation Neutron Source and is currently under testing for characterization. In this paper, we will present the design, fabrication, and first test results of the BSM prototype.

Footnotes

Funding Agency

This work was supported by the U.S. Department of Energy, Office of Basic Energy Sciences, under contract DE-SC0020590.

Primary author: ARAUJO MARTINEZ, Aurora Cecilia (RadiaBeam Technologies)

Co-authors: MORO, Adam (RadiaBeam Technologies); ALEKSANDROV, Alexander (Oak Ridge National Laboratory); SMIRNOV, Alexander (RadiaBeam); AGUSTSSON, Ronald (RadiaBeam); KUTSAEV, Sergey (RadiaBeam)

Presenter: ARAUJO MARTINEZ, Aurora Cecilia (RadiaBeam Technologies)

Session Classification: Tuesday Poster Session

Track Classification: MC4: Technology: MC4.1 Beam diagnostics