

Electrostatic Septa Development at Fermi National Accelerator Laboratory (FNAL)

Mu2e experiment requires 8 GeV proton beam to study rare neutrinoless decays of a muon to an electron. The delivery of 8 spills every 1.4 seconds with $1E12$ protons per spill is provided by means of resonant slow extraction. Two electrostatic septa (ESS) have been designed to facilitate the slow extraction. Each septum will have a cathode that is energized to a nominal voltage of 100kV with a gap of 14m to achieve a 2mrad kick. ESS1 is the leading septum with 544 foil strips and one diffuser foil with a cathode length of 133.6cm. ESS2 is the trailing septum with 673 foils with a cathode length 166.4cm. The mechanical design, assembly, conditioning, and installation of the ESS will be discussed in detail.

Primary authors: ALVAREZ, Matthew; LAURETO, Kathrine (Fermi National Accelerator Laboratory); NAGASLAEV, Vladimir (FNAL)

Presenter: ALVAREZ, Matthew