

Abstract

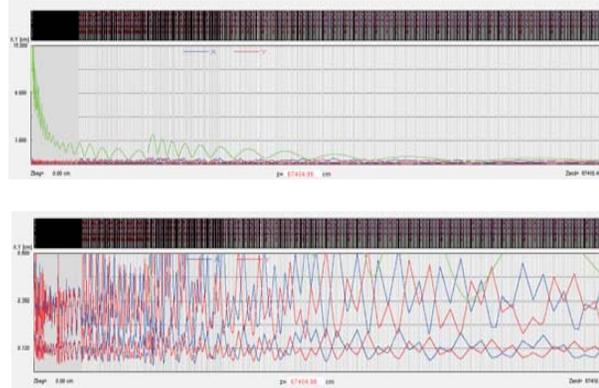
The FNAL High Intensity Neutrino Source is a 8 GeV superconducting H- injector with primary mission of enabling 2MW beam power for the Fermilab Main Injector neutrino program. Stat-to-end simulations are presented with TRACK (ANL) and ASTRA (DESY).

**ACCELERATOR DESCRIPTION
 (IS + RFQ + ~670 m Acc. Section)**

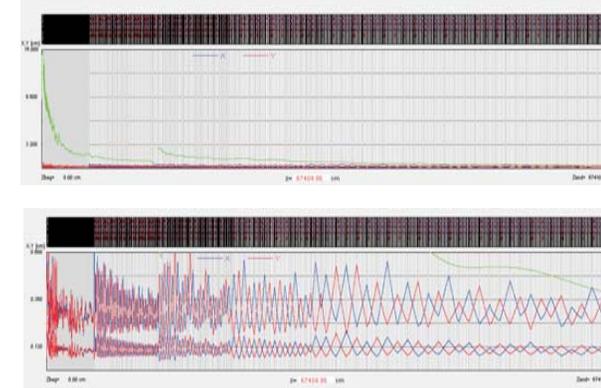
- **Medium Energy Beam Transport**
 L=2.335 m,
 2 RT cavities, 3 sol.
- **Room Temperature – Triple Spoke Renonators**
 L=10.3011 m,
 16 RT cavities, 16 sol.
- **Single Spoke Resonators**
 L=43.1 m,
 51 SC cavities, 36 sol.
- **Triple Spoke Resonators**
 L=85.4 m,
 42 SC cavities, 43 quads
- **BETA=0.81**
 L=85.4 m,
 56 SC cavities, 28 quads
- **BETA=1.0**
 L=451.4 m,
 287 SC cavities, 46 quads

TRACK output for zero current

45 mA Optics with Zero Current

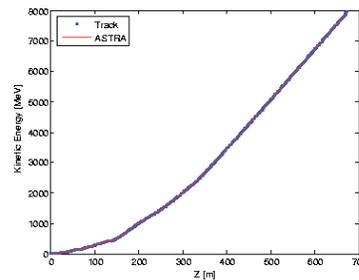


Optics tuned with Zero Current

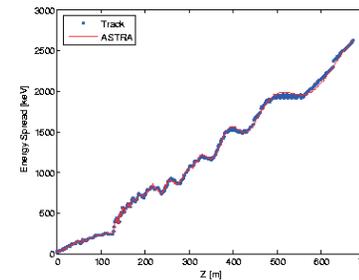


TRACK / ASTRA comparison

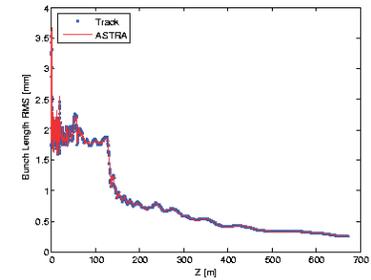
Energy



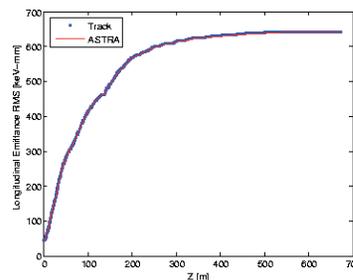
Energy Spread



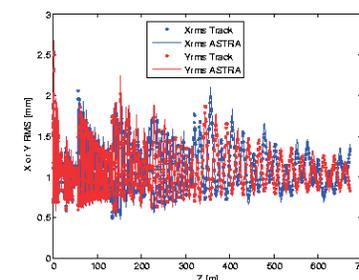
Bunch Length



Long. Emittance



Trans. Size



Trans. Emittance

