



Managed by Fermi Research Alliance, LLC for the U.S. Department of Energy Office of Science

Last LB650 CM Fault Linac Lattice Retuning

JF Ostiguy

Accelerator Physics Meeting

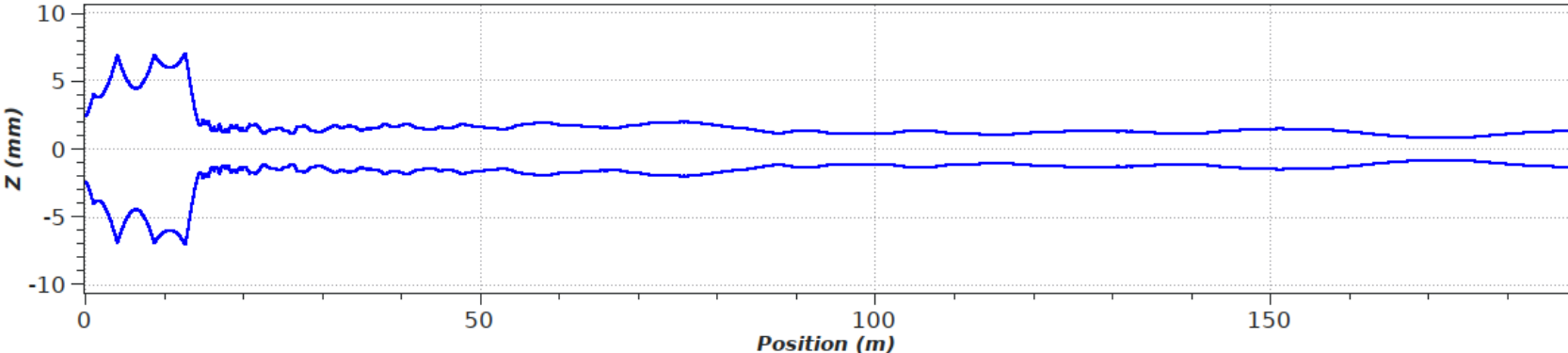
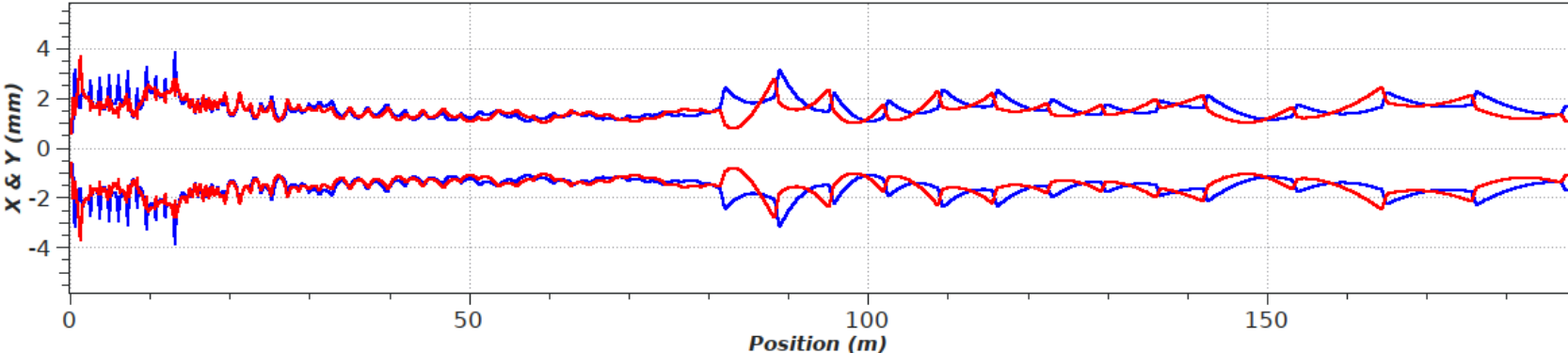
07/11/2019

Retuning Strategy

- At the end of the LB650 section, the energy is relatively high so the loss of the last CM is a small perturbation (beta function increases with momentum so s^2/β^* is smaller).
- There is no need to retune the elements to get a smooth envelope.
- That said, the energy at the linac output is approximately 750 MeV, (50 MeV below spec).
- It should be possible to reduce the booster top energy to match the linac output. If this is not the case, or if reaching 800 MeV is required (for Mu2e target yield) the lost output energy can be recovered by raising the field in the HB650 section by about 10%. This may or may not be feasible, depending on how much field margin is available.

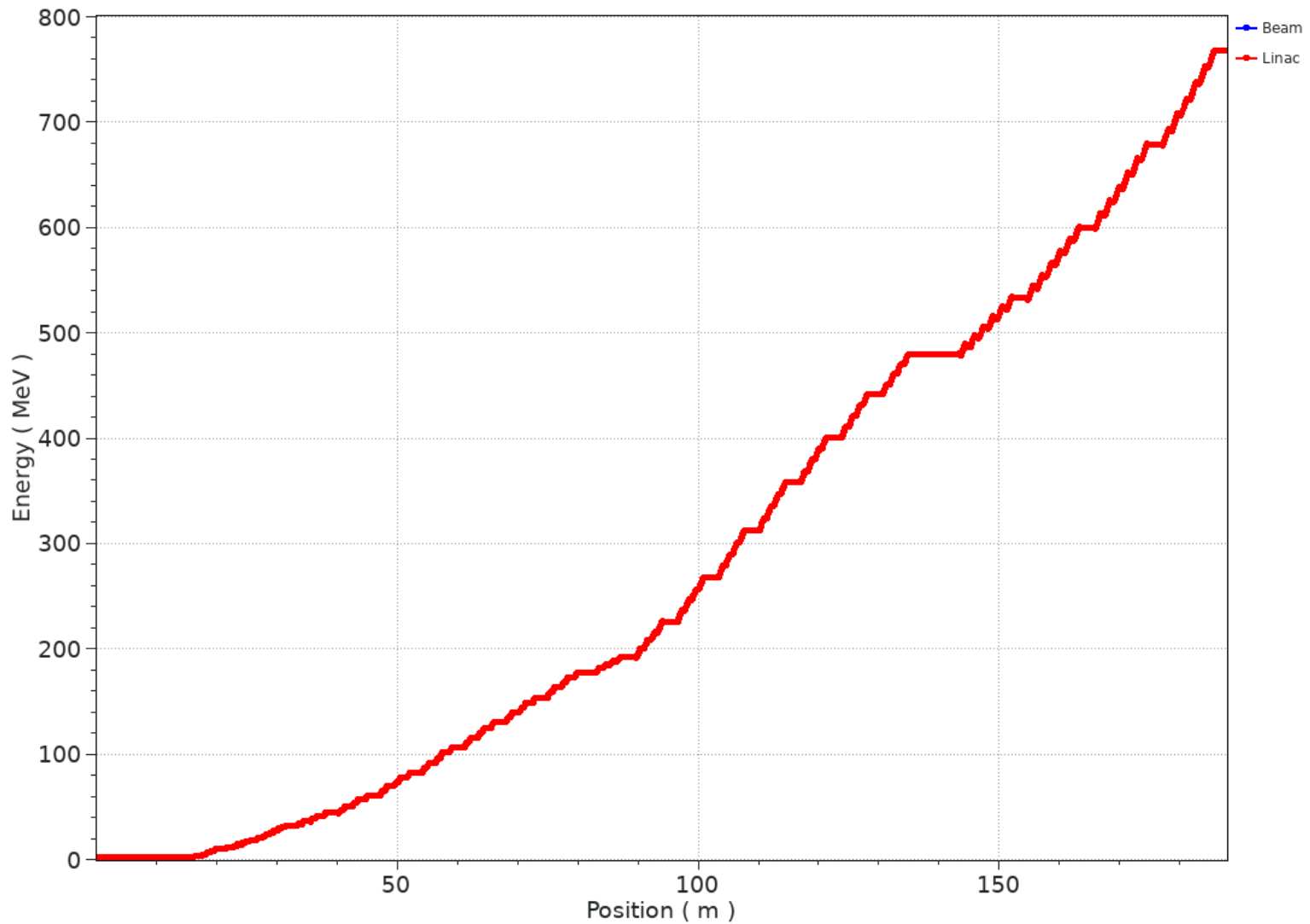
Perturbed Envelope

[Ver:2.16.0.18] TraceWin - CEA/DRF/Irfu/DACM



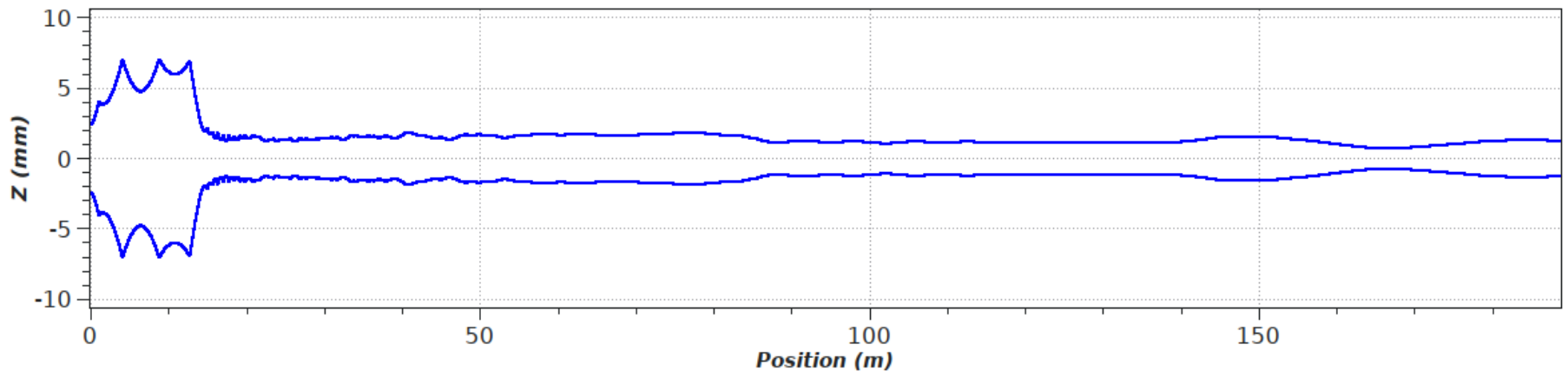
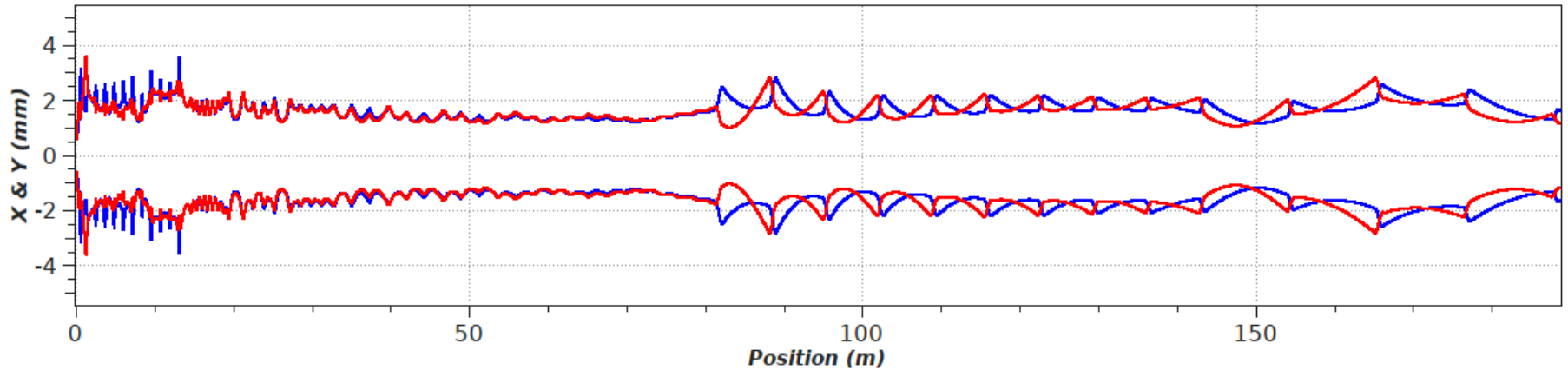
Perturbed Lattice Energy Profile

[Ver:2.16.0.18] TraceWin - CEA/DRF/Irfu/DACM



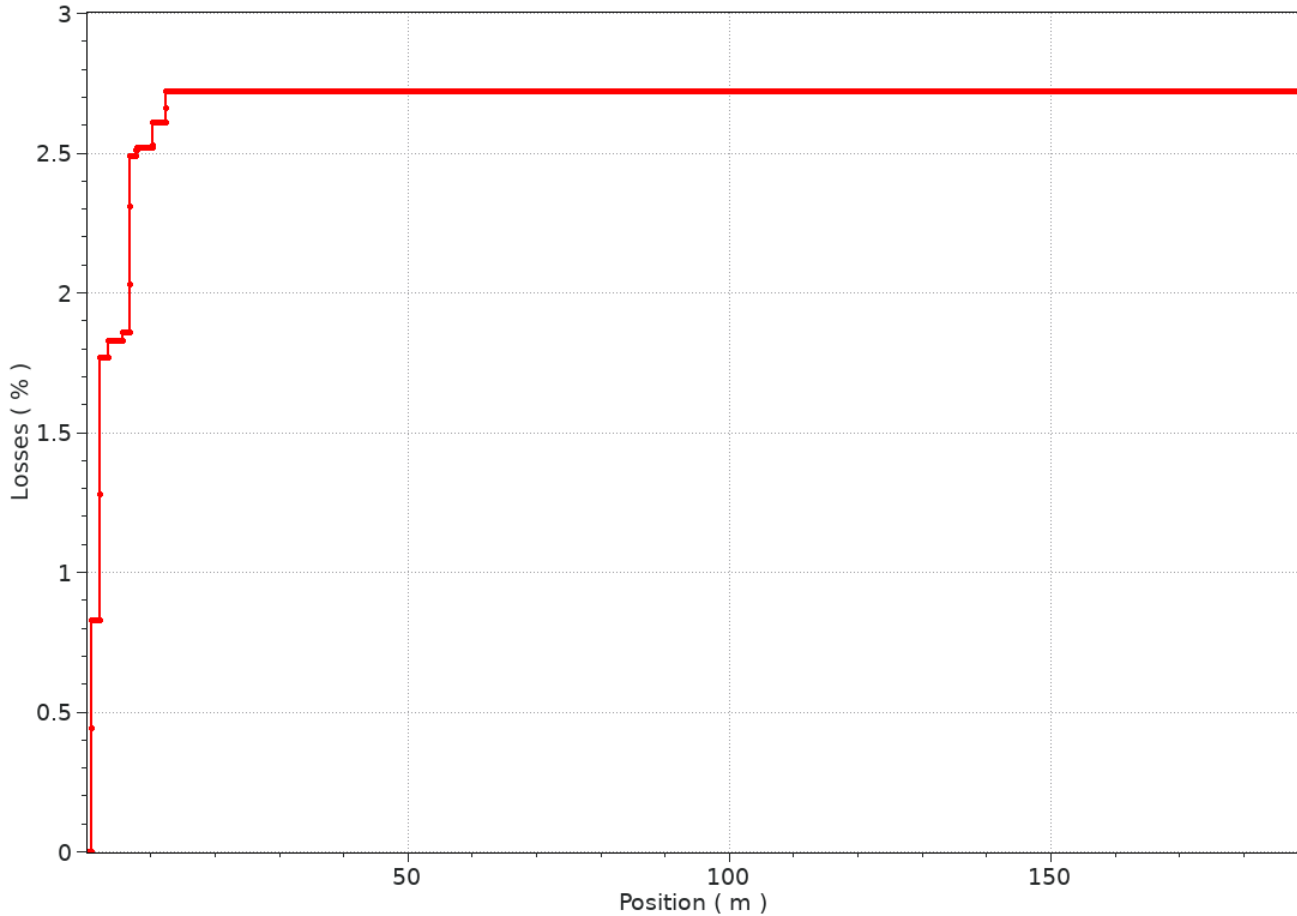
Retuned Envelope (Partran Mode)

[Ver:2.16.0.18] TraceWin - CEA/DRF/Irfu/DACM

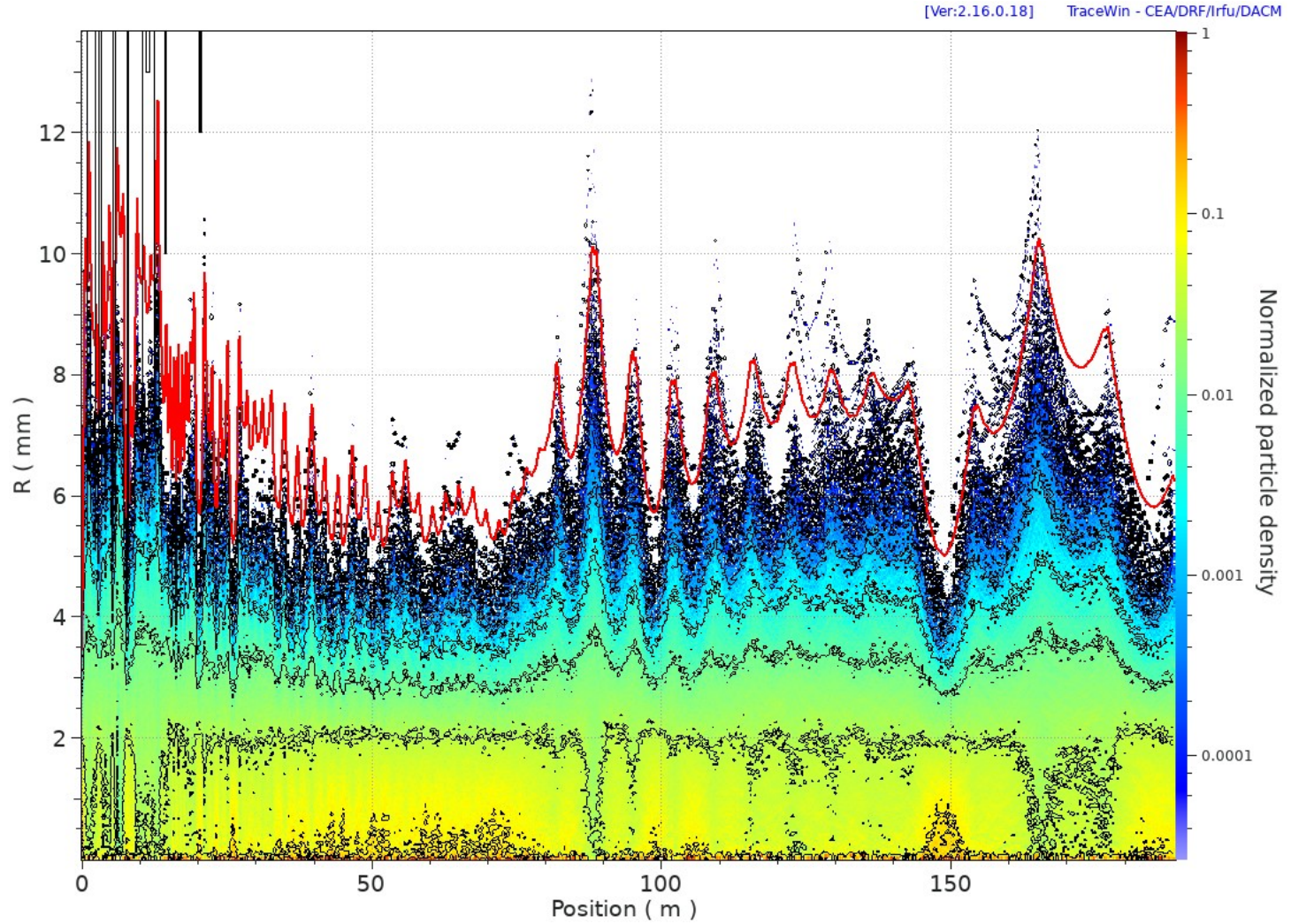


Losses

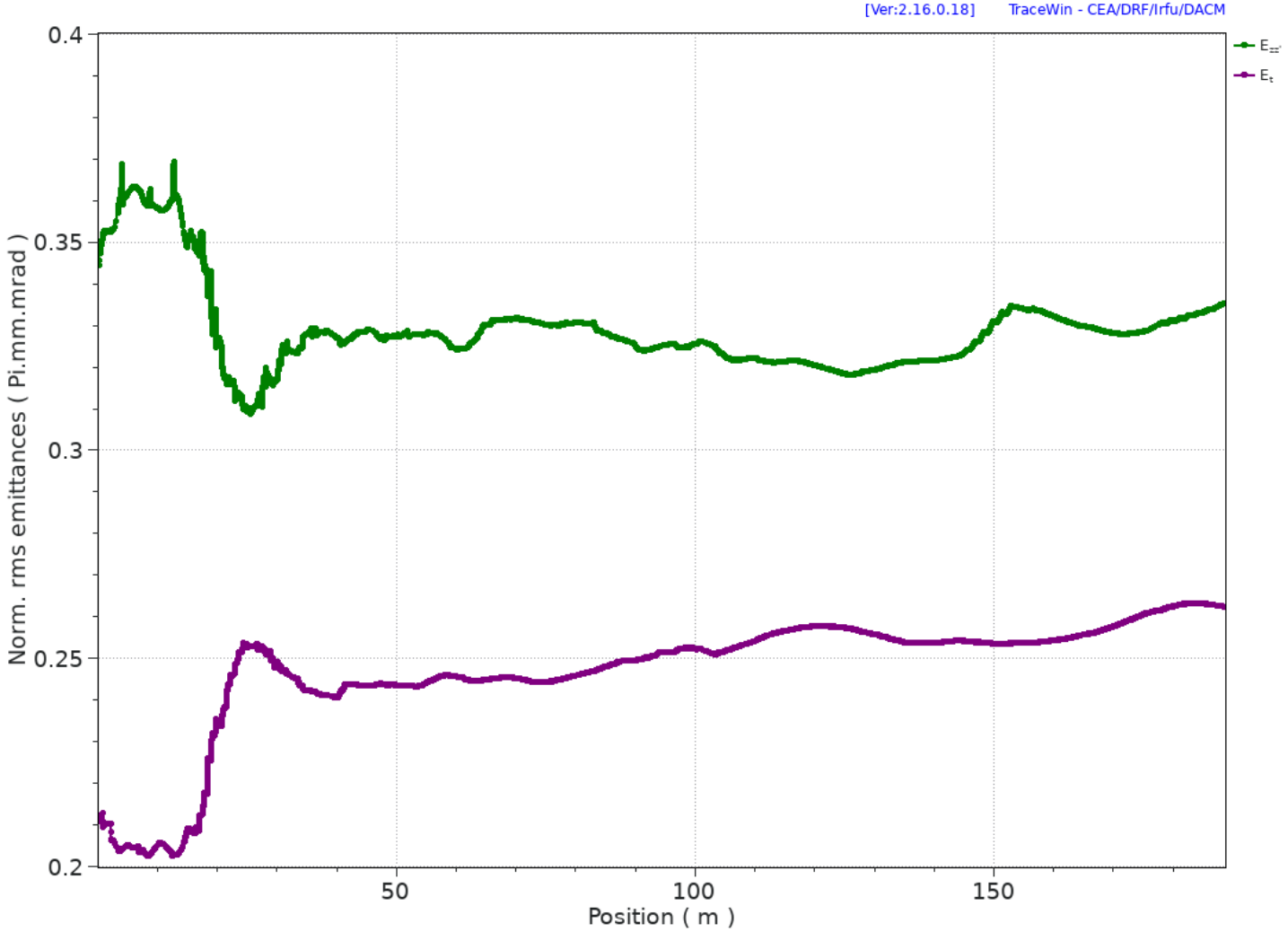
[Ver:2.16.0.18] TraceWin - CEA/DRF/Irfu/DACM



Density



Emittances



Energy

