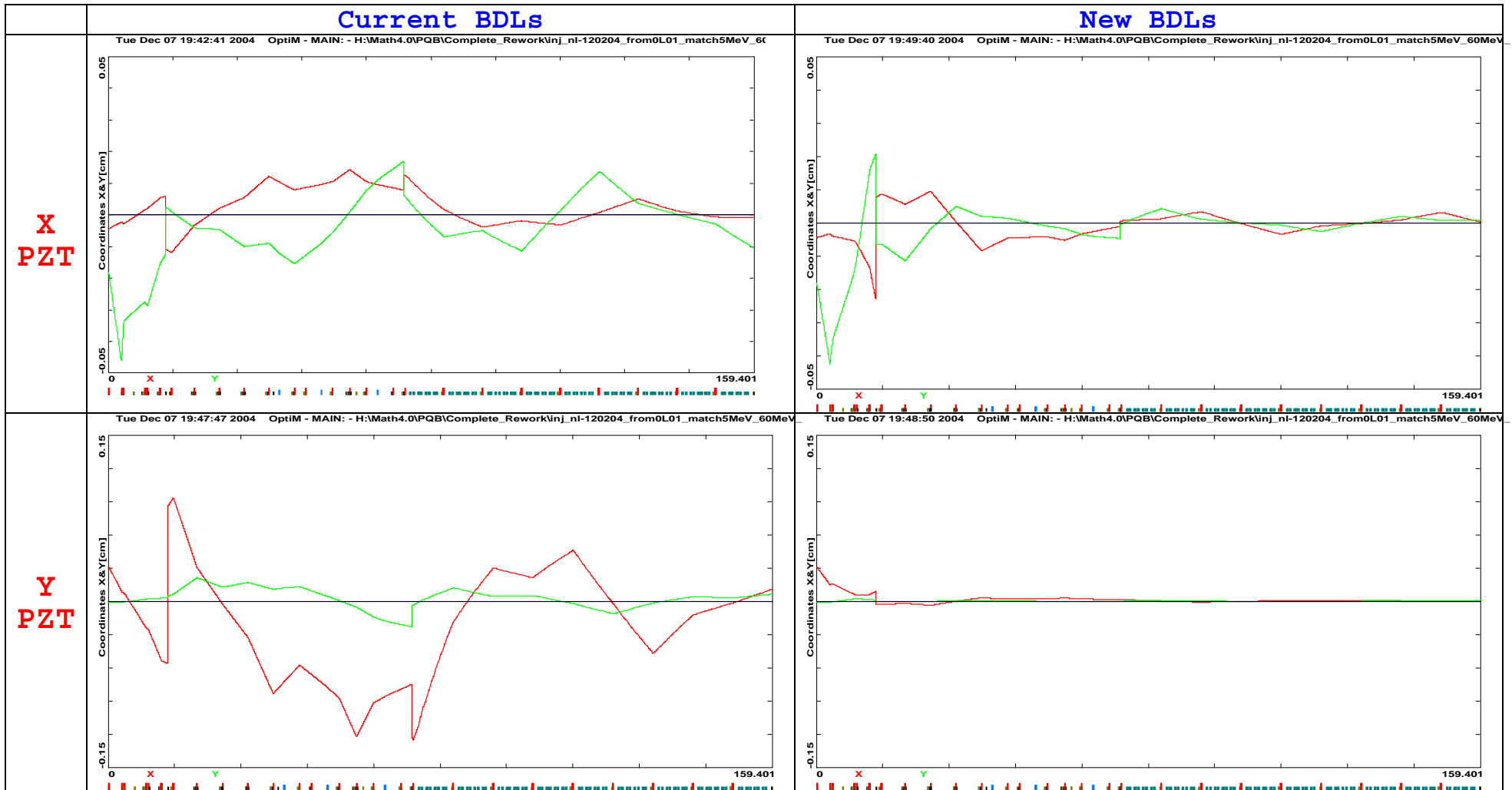


Re-Match the Injector from 5 MeV to end of North Linac

- **Data taken on 11/24 & 12/02:**
 - PZT orbits
 - Transport across cryo-module
 - Transport from Chicane (60 MeV) to North Linac
 - Transport from Chicane (60 MeV) to Arc 1 (630 MeV)
 - Beam distribution at 5 MeV
- **Solution:**
 - 5 MeV and 60 MeV quads used to rematch the PZT orbit to NL
 - All PZT orbits can be drastically reduced in NL
 - PZT orbit is not completely compatible with beam shape
 - Need to relax solution to accommodate both
 - [A relaxed solution is being worked on.](#)
 -

PZT Propagation from IPM0L01 (5 MeV) to IPM1L11 (320 MeV) with Empirical Transport across CM and from Chicane to NL

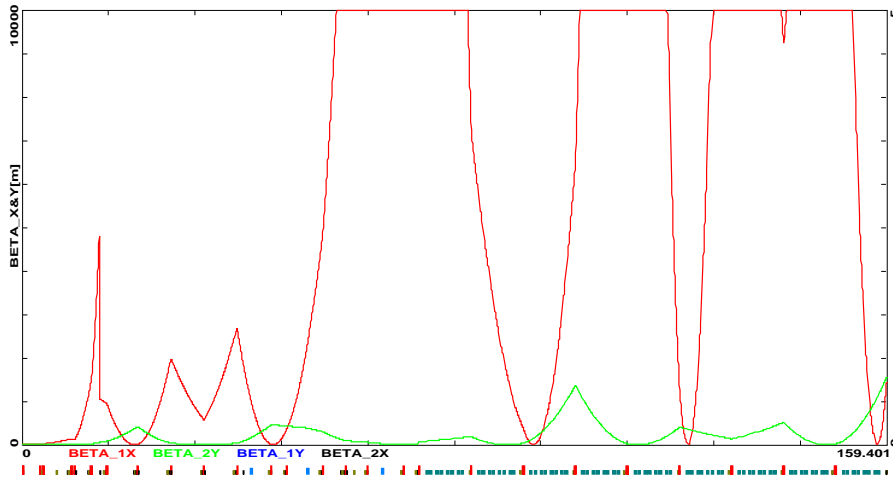


- Original goal: Control only Y component (green) of X PZT and vice versa.
- Improved overall matching apparently brought all components under control.

	Current BDL	New BDL
MQJ0L01	56.900	44.100
MQJ0L02	-125.800	-87.900
MQJ0L02A	114.200	44.100
MQJ0L03A	22.500	-35.900
MQJ0L03	-41.500	-27.900
MQJ0L04	25.400	-59.900
MQD0L06	399.030	330.030
MQD0L07	-413.180	-461.180
MQD0L08	363.710	492.710
MQD0L09	-223.920	-718.920
MQD0L10	322.730	520.730

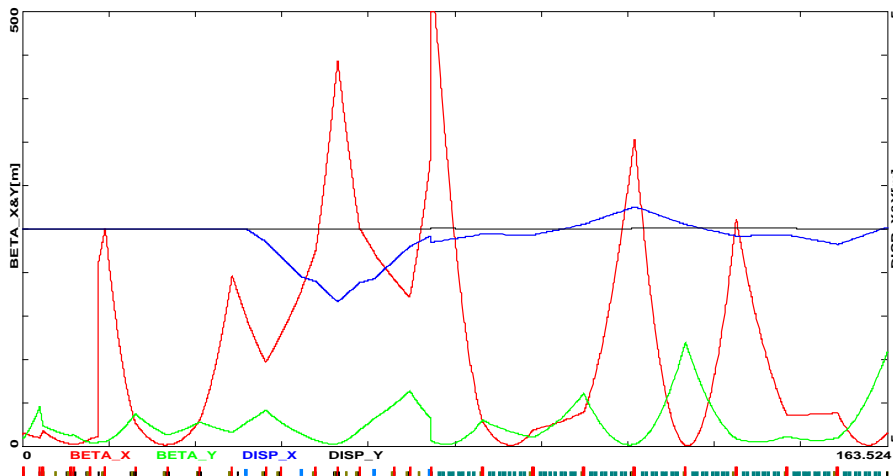
What this will do to the beam (Scale 10000 m):

Thu Dec 09 11:31:48 2004 Optim - MAIN: - H:\Math4.0\QB\Complete_Rework\inj_ni-120204_from0L01_match5MeV_60MeV_



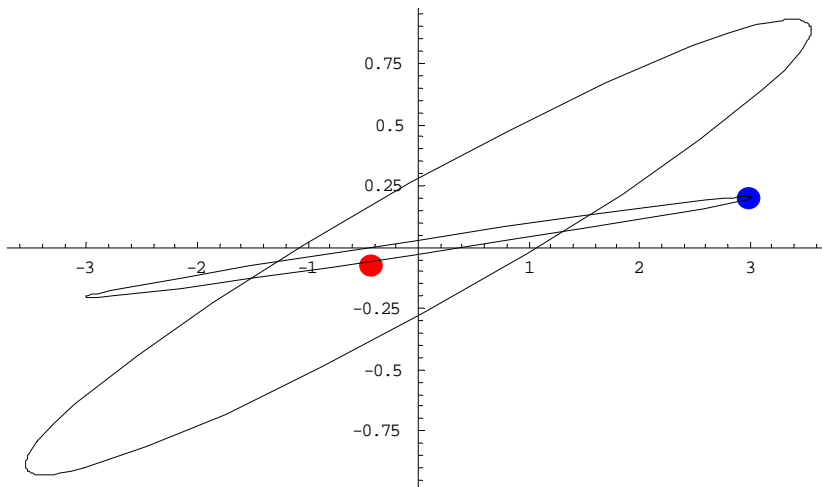
What we have now (Scale 500 m):

Thu Dec 09 11:30:58 2004 Optim - MAIN: - H:\Math4.0\QB\Complete_Rework\inj_ni-120204_from0L01_scale_before_MBL



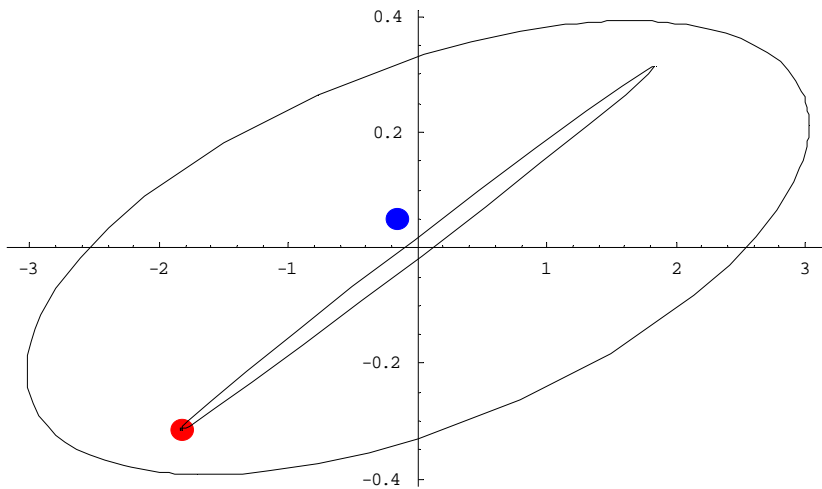
The PZT orbits are not completely compatible with the beam spot

Phase Space at IPM0L01 (R: X PZT, B: Y PZT)
X-plane



CS mismatch factor: 25.1

Phase Space at IPM0L01 (R: X PZT, B: Y PZT)
Y-plane



CS mismatch factor: 9.88