

Injector Online Model Status and Plans

L.Ahrens, K. Brown, J. W. Glenn, J.
Morris, S. Nemesure, V. Schoefer, J.
Skelly, N. Tsoupas

Progress

- *Snapramps* (*'The Ramp'*)
 - Data structure for model inputs (p.s. currents, beam parameters...)
- *RampMonitor* (*'Activate'*)
 - Monitors for changes in 'live' files (fixed period for now).
- *AGSModelServer*
 - Takes Snapramps, produces (MAD-X) model data, (uses CDEV)
- *ModelViewer* (*'RampDesigner'*)
 - Views model data (!). “Leveraged” (=stole) RHIC Ramp Designer. Includes BBAT longitudinal calculations.

- *Booster/BtA 'online-ish'*
 - Simple online infrastructure built for BtA studies. Must be moved to server.

maxd Booster User: 4 AGS User: 4 Blue Species: Yellow Species:

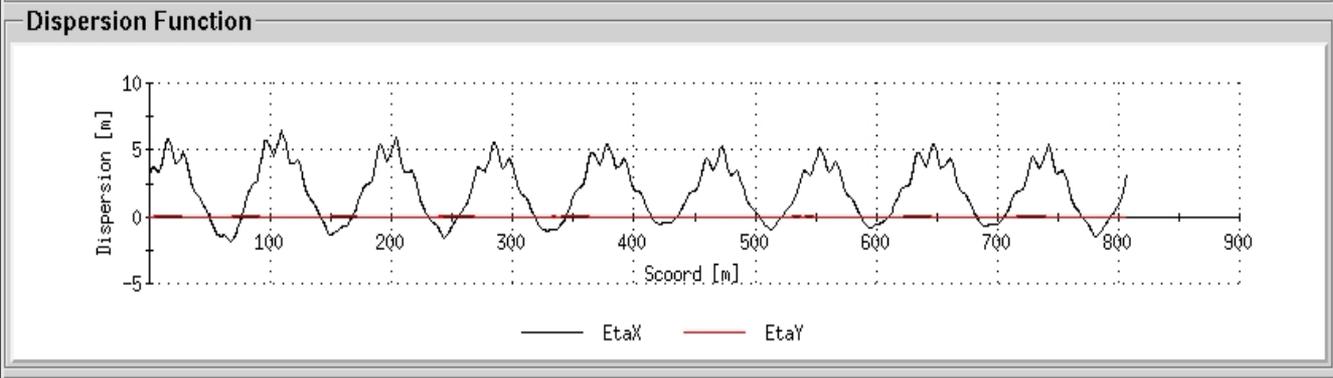
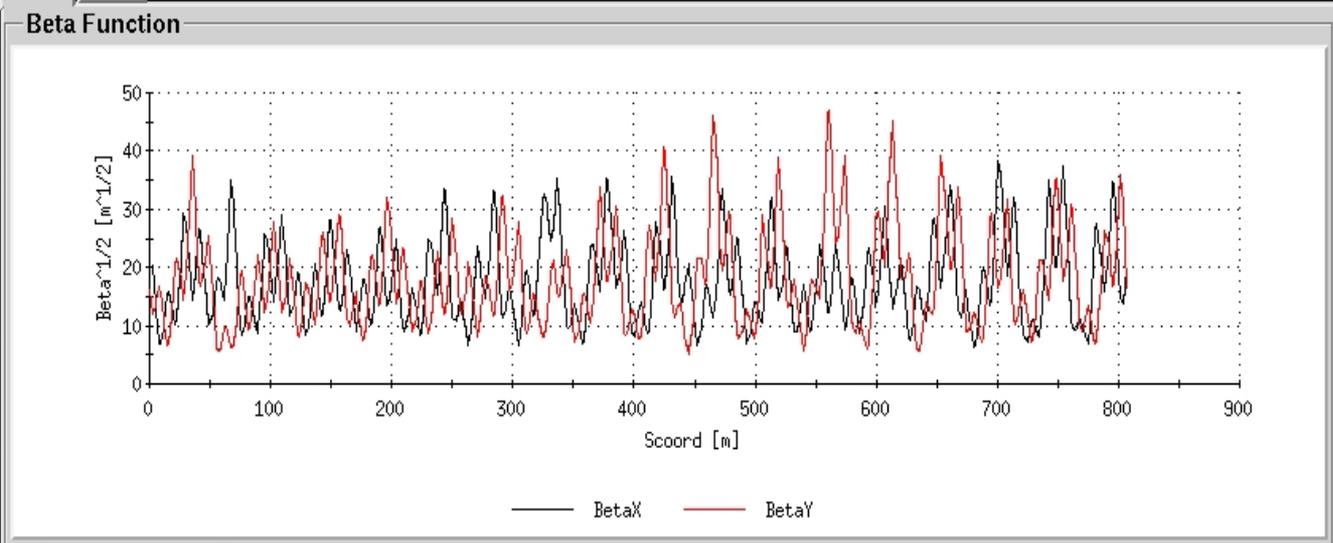
Booster AGS

DipoleRamp Longitudinal TuneChrom Lattice Optics

prompt injection Twiss Orbit

Tunes/Chroms

Stone #	0.000000000
Time [sec]	0.000000000
Gamma	0.000000000
BetaGamma	0.000000000
Brho [T-m]	0.000000000
Qx	0.000000000
Qy	0.000000000
ChromX	0.000000000
ChromY	0.000000000
ChromX2	0.000000000
ChromY2	0
ChromX3	0
ChromY3	0
GammaT	0



OptiCalc Design+Trim Ramp: dAu80 Config: dbconfig/1192023263 Blue Species: d Yellow Species: Au

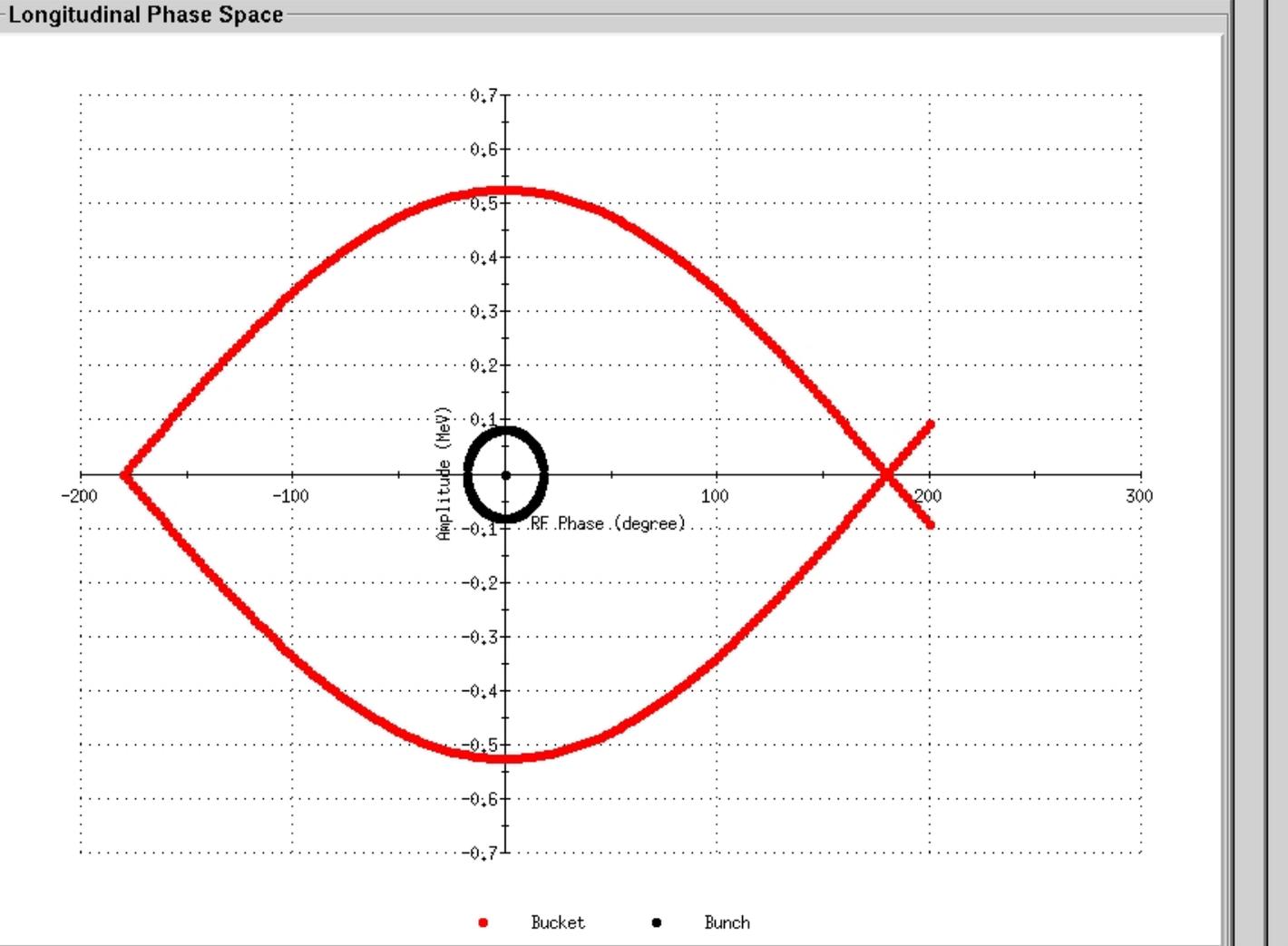
Booster AGS
 DipoleRamp Longitudinal TuneChrom Lattice Optics MagCurr Strengths TransFunc BDL ShuntCurr ShuntVolt

Parameters

Place	Brho [T-m]
Injection	0
Store	0
	0
	0

Functions

Machine	Booster
Ion Species	H
Charge State	1
B dot(T/s)	0
B Field (T)	0.205405
RF frequency (MHz)	1
Gamma	1.35207
pc (GeV/c/n)	0.85383
KE (GeV/n)	0.330341
RF Volts/turn (kV)	15
RF Harmonic	1
Bunch Length (ns)	100
Emittance (eVs/u)	0.0810266
Beta	0.673042
Eta	-0.50372
Stat. Buck. (eVs/u)	4.2025
Moving Buck. (eVs/)	4.2025
Synch. Freq. (Hz)	1446.58
Phase Angle (rad)	0
Phase Angle (deg)	0
Bunch dW (MeV)	0.082177
Bunch dE (MeV)	0.516333
Bunch dE/Es	0.407006
Bunch dP (MeV/c/n)	0.767164
Bunch dP/P	0.898497



Plans

- Clients, clients, clients
 - OpticsControl and AgsTuneMeter have to display online predicted tunes. (Possible for Run 09?)
 - polarControl(AGS) and agsIPM
 - ModelViewer – continued development

Plans

- Move Booster/BtA online for AGS injection matching (makes profileDisplay a possible client)
- Develop interface between AGS extraction and AtR.
- ModelViewer (longer term): add offline capability.
- Working group investigating using PTC as the model engine (in addition to MAD-X).