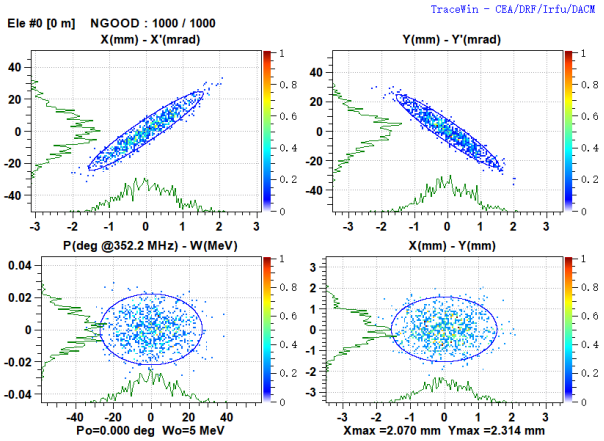
Input distribution (Ele#0)



Beam parameters [Run: 1]

Graph1 | Graph2 | Twiss _emit. / Center / Size | Beam matrix

Emittance calculated

Emittance (%) 99 Ok

N rms 5

Filtering (iteratif process)

Apply Exclude all particle above 0 x Rms

```
                                X-X'
Emit [rms] = 0.2500  π.mm.mrad [ Norm. ]
Emit [91.20%] = 1.2500  π.mm.mrad [ Norm. ]
Beta = 0.2000  mm/π.mrad
Alpha = -3.0000
                                Y-Y'
Emit [rms] = 0.2500  π.mm.mrad [ Norm. ]
Emit [92.00%] = 1.2500  π.mm.mrad [ Norm. ]
Beta = 0.2000  mm/π.mrad
Alpha = 3.0000
                                Phase-Energy
Emit [rms] = 0.1190  π.deg.MeV [ Norm. ]
Emit [92.10%] = 0.5952  π.deg.MeV [ Norm. ]
Beta = 1224.1185  deg/π.MeV
Alpha = -0.0000
                                X-Y
Emit [rms] = 0.4837  mm² [ Norm. ]
Emit [91.80%] = 2.4184  mm² [ Norm. ]
Beta = 1.0000
Alpha = -0.0000
```

OK

Input Beam Matrix

Non Norm. rms emittances (Pi.m.rad)

Exx' 2.4183913e-06 Eyy' 2.4183914e-06 Ezz' 2.8713845e-06

Copy matrix to clipboard

x (m)	4.8367827e-07	7.255174e-06	1.9807211e-15	3.7323255e-14	1.511652e-15 .. 2812498e-13
x' (rad)	7.255174e-06	).00012091957	).2104836e-14	1.4674472e-13	..3274043e-14).6630143e-13
y (m)	..9807211e-15	).2104836e-14	4.8367827e-07	7.2551741e-06	).8354285e-15 ..6338871e-13
y' (rad)	).7323255e-14	1.4674472e-13	').2551741e-06	).00012091957	').4750651e-14).4873175e-12
z (m)	1.511652e-15	..3274043e-14	).8354285e-15	').4750651e-14	).6141556e-06).2285064e-13
dp/p	..2812498e-13	).6630143e-13	..6338871e-13	).4873175e-12	).2285064e-13 9.776935e-07

Determinants

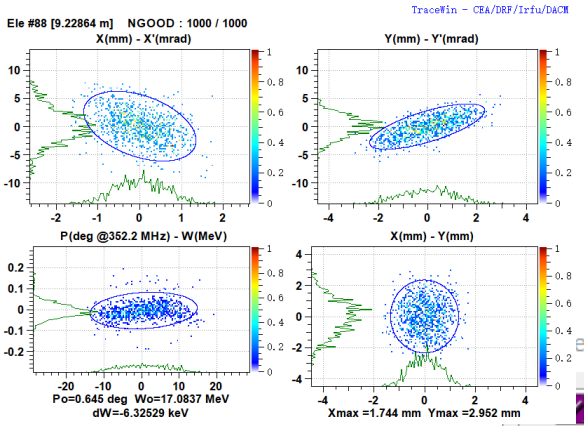
	5.8486166e-12	-5.985227e-29	-6.9352068e-28
2D	-5.985227e-29	5.8486167e-12	-2.6734837e-27
	-6.9352068e-28	-2.6734837e-27	8.4220039e-12

4D 3.4206317e-23

6D 2.8808573e-34

Cancel

Output distribution (Ele #88)



eam parameters [Run: 1]

Graph1 | Graph2

Twiss _emit. / Center / Size

Beam matrix

Emittance calculated

Emittance (%) 99 Ok

N rms 5

Filtering (iteratif process)

Apply Exclude all particle above 0 x Rms

```
                                X-X'
Emit [rms] = 0.2904  π.mm.mrad [ Norm. ]
Emit [90.80%] = 1.4518  π.mm.mrad [ Norm. ]
Beta = 0.2384  mm/π.mrad
Alpha = 0.4494
                                Y-Y'
Emit [rms] = 0.2525  π.mm.mrad [ Norm. ]
Emit [92.80%] = 1.2625  π.mm.mrad [ Norm. ]
Beta = 0.8247  mm/π.mrad
Alpha = -1.0123
                                Phase-Energy
Emit [rms] = 0.2454  π.deg.MeV [ Norm. ]
Emit [93.10%] = 1.2272  π.deg.MeV [ Norm. ]
Beta = 165.2080  deg/π.MeV
Alpha = -0.1515
                                X-Y
Emit [rms] = 0.6264  mm² [ Norm. ]
Emit [91.90%] = 3.1319  mm² [ Norm. ]
Beta = 0.5766
Alpha = 0.0044
```

OK

Input Beam Matrix

Non Norm. rms emittances (Pi.m.rad)

Exx' 1.5150145e-06 Eyy' 1.3174063e-06 Ezz' 3.1127226e-06

Copy matrix to clipboard

	x (m)	3.6116496e-07	-6.8087368e-07	-2.7777025e-09	-3.1232744e-08	2.4574271e-08	1.3778765e-09
x'	(rad)	-6.8087368e-07	7.6387754e-06	-8.628349e-08	-2.0040324e-07	3.644241e-07	2.109393e-08
	y (m)	-2.7777025e-09	-8.628349e-08	1.0864055e-06	1.3336094e-06	-5.2007827e-08	2.6126793e-08
y'	(rad)	-3.1232744e-08	-2.0040324e-07	1.3336094e-06	3.2345871e-06	-7.3429983e-08	-4.4546318e-08
	z (m)	2.4574271e-08	3.644241e-07	-5.2007827e-08	-7.3429983e-08	8.0318043e-06	-4.8904542e-07
	dp/p	1.3778765e-09	2.109393e-08	2.6126793e-08	-4.4546318e-08	-4.8904542e-07	1.3263639e-06

Determinants

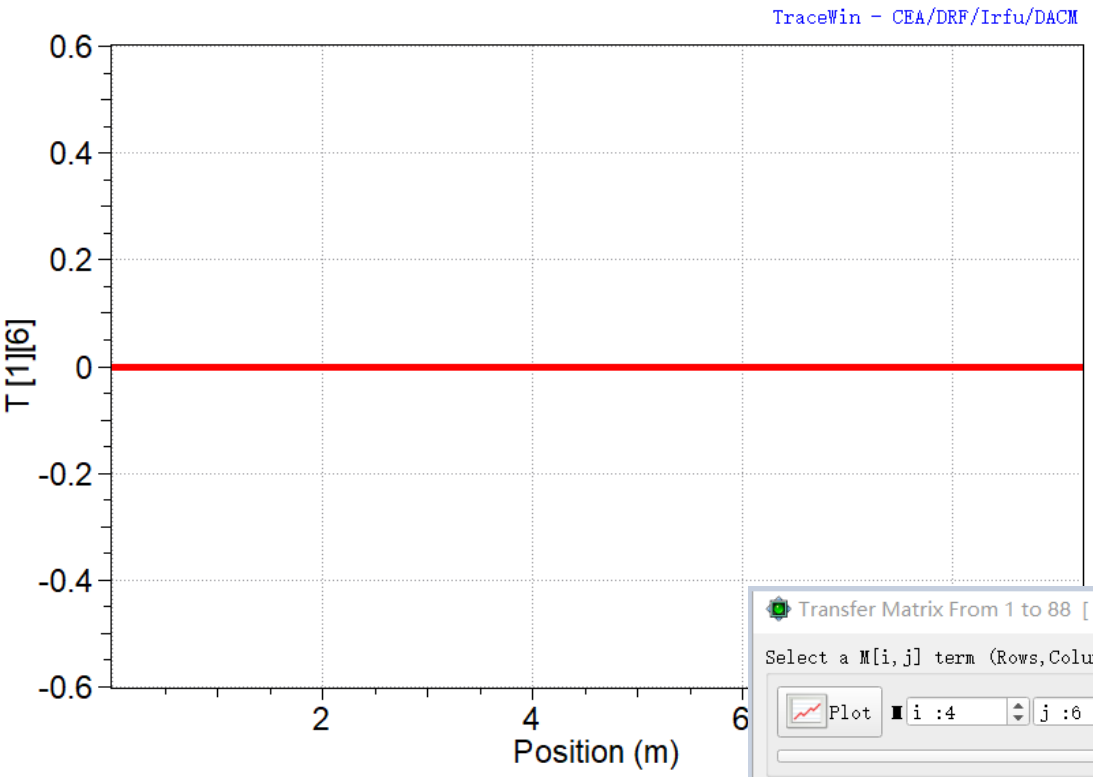
	2.2952691e-12	-2.1382096e-15	1.6236527e-17
2D	-2.1382096e-15	1.7355593e-12	4.2352472e-15
	1.6236527e-17	4.2352472e-15	1.041393e-11

4D 3.9648527e-24

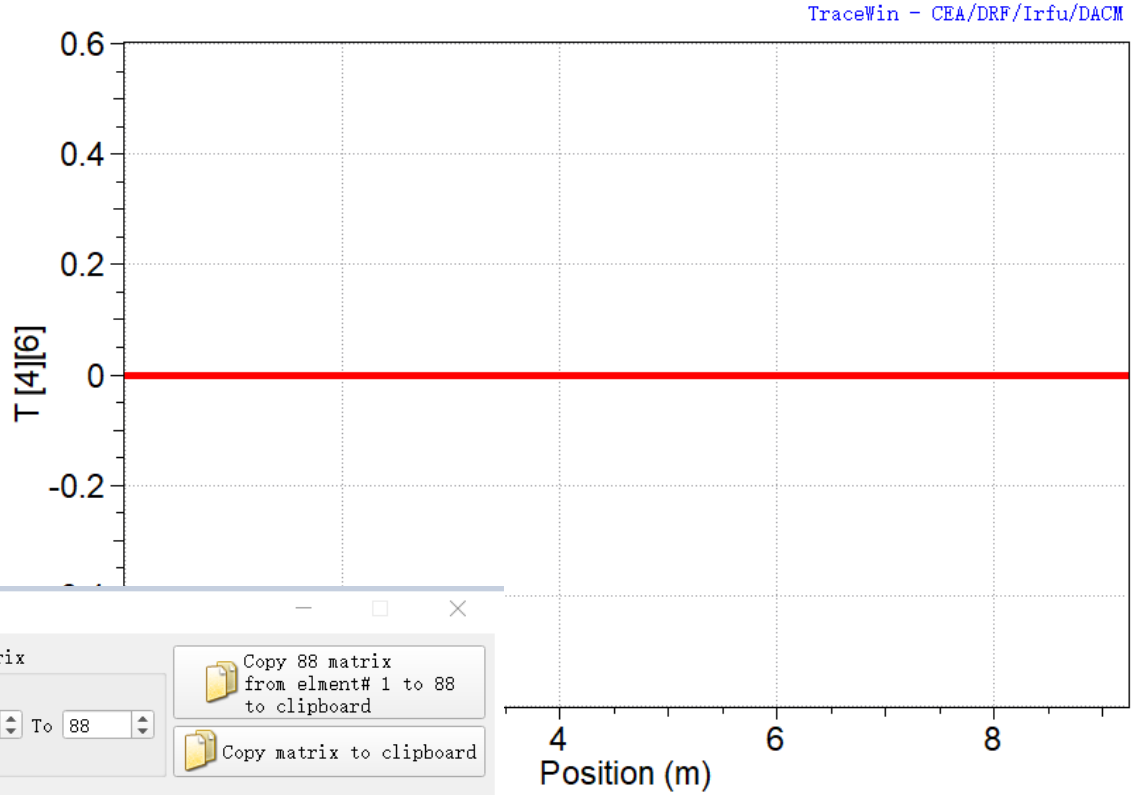
6D 4.0991135e-35

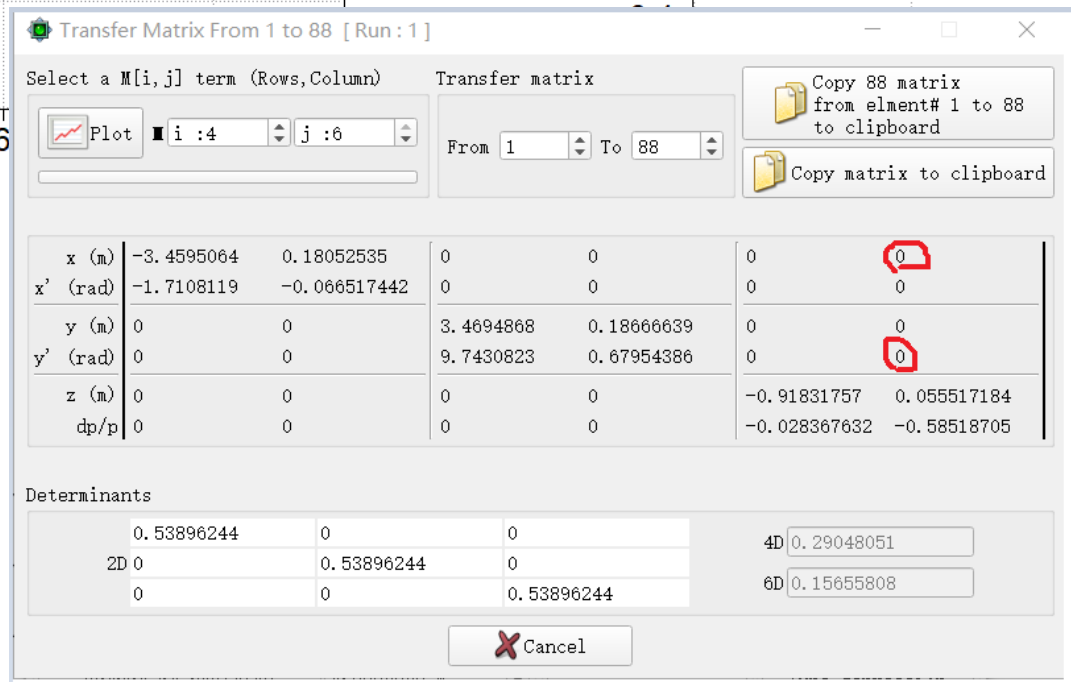
Cancel

$T_{16} = 0$


TraceWin - CEA/DRF/Irfu/DACM
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
T [1][6]
2
4
6
Position (m)

$T_{46} = 0$


TraceWin - CEA/DRF/Irfu/DACM
0.6
0.4
0.2
0
-0.2
T [4][6]
4
6
8
Position (m)


Transfer Matrix From 1 to 88 [Run : 1]
Select a M[i,j] term (Rows,Column)
Plot
i :4
j :6
Transfer matrix
From 1
To 88
Copy 88 matrix from elment# 1 to 88 to clipboard
Copy matrix to clipboard
x (m) -3.4595064 0.18052535 0 0 0 0
x' (rad) -1.7108119 -0.066517442 0 0 0 0
y (m) 0 0 3.4694868 0.18666639 0 0
y' (rad) 0 0 9.7430823 0.67954386 0 0
z (m) 0 0 0 0 -0.91831757 0.055517184
dp/p 0 0 0 0 -0.028367632 -0.58518705
Determinants
0.53896244 0 0
2D 0 0.53896244 0
0 0 0.53896244
4D 0.29048051
6D 0.15655808
Cancel

$$\beta_{xx'} = \frac{\sigma_{11} - \sigma_{66} \cdot T_{16}^2}{\varepsilon_{xx'}} \text{ and } \beta_{yy'} = \frac{\sigma_{33} - \sigma_{66} \cdot T_{46}^2}{\varepsilon_{yy'}}$$

$$Calculated\ \beta_{xx'} = \frac{3.6116496e-07}{2.4183913e-06} = 0.14934, \qquad \beta_{yy'} = \frac{1.0864055e-06}{2.4183913e-06} = 0.44923,$$

$$Envelope\ \ \beta_{xx'} = 0.27688, \qquad \beta_{yy'} = 0.83287,$$

$$Phase\ space\ \ \beta_{xx'} = 0.2384, \qquad \beta_{yy'} = 0.8247,$$