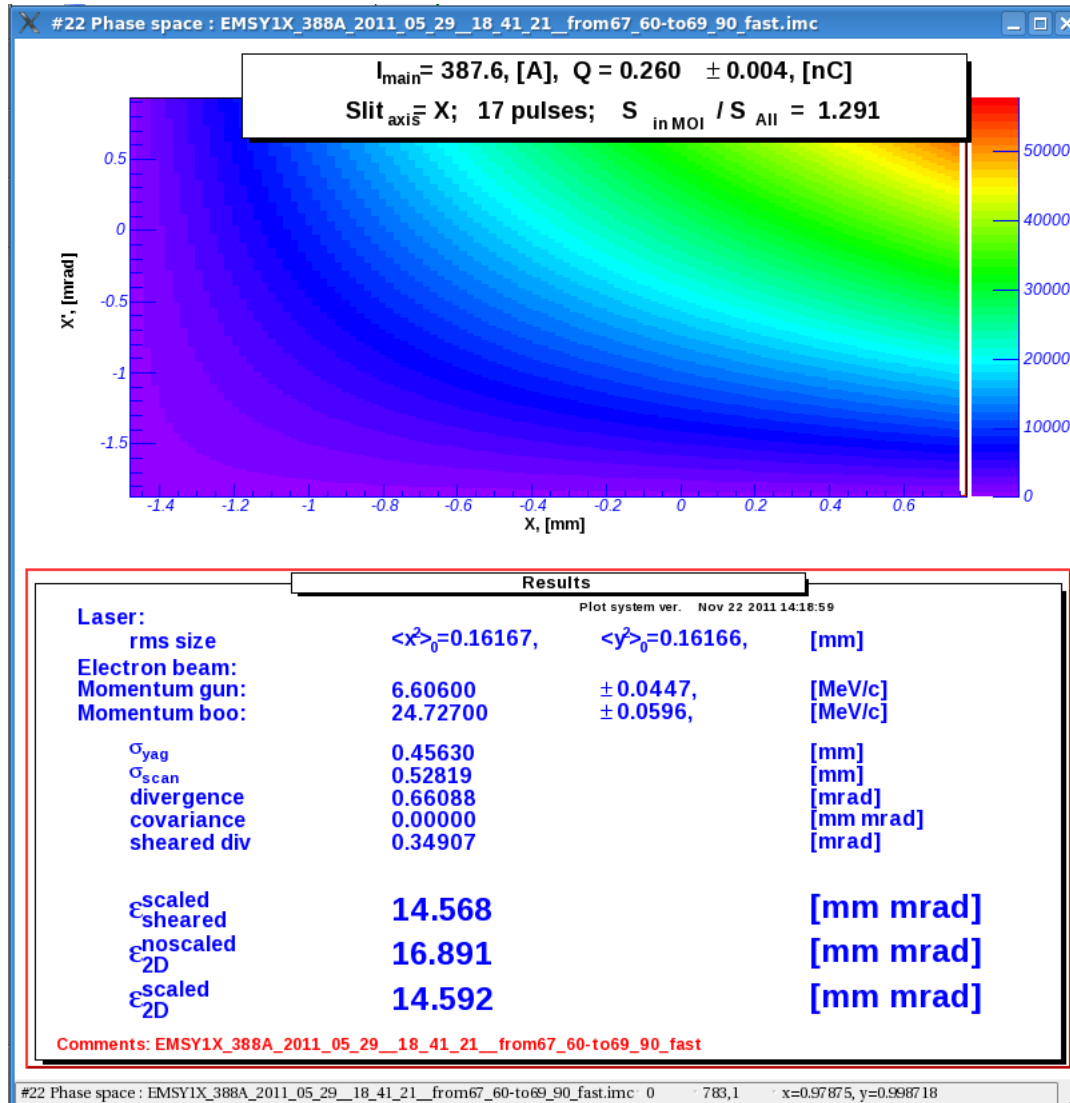


# Phase space reconstruction in EmCalc.

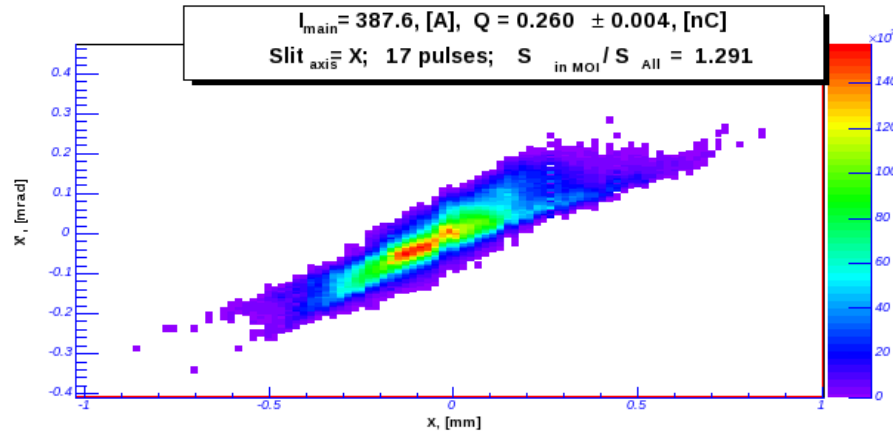
$$(X, Y) = X * Y$$



# Changes

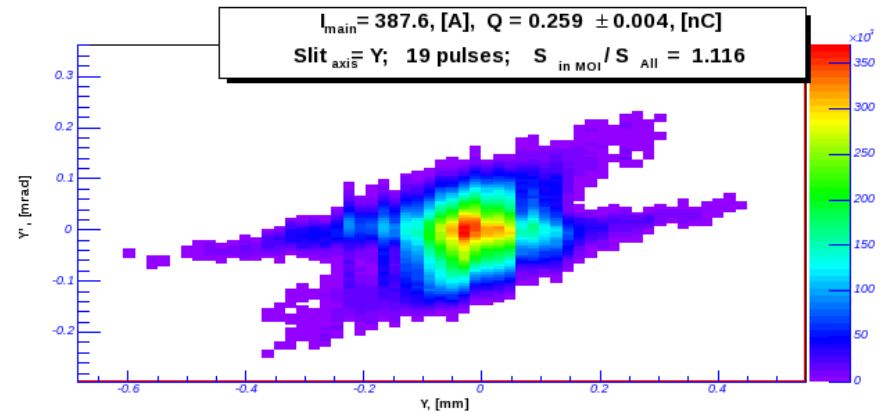
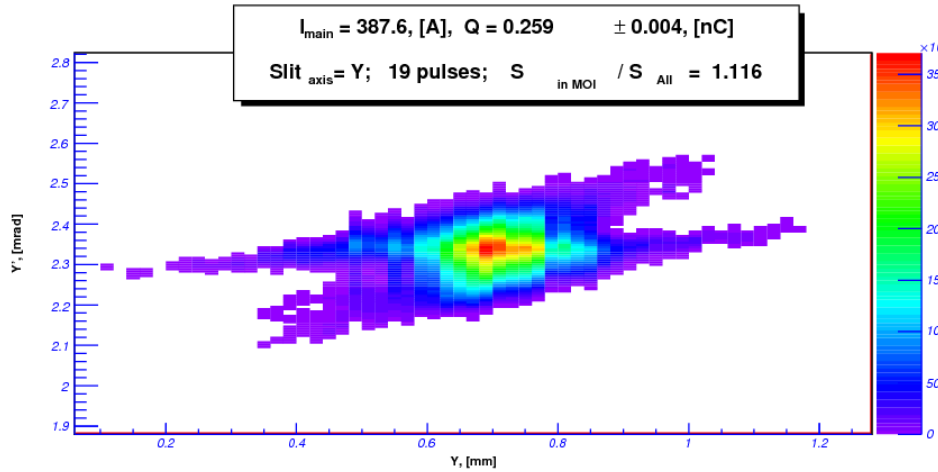
- Act. dist. =  $(\text{num\_beamlets}/\text{rate}) * \text{speed}$
- Cent.beamlet =  $\text{To-From}/2$
- Local shift =  $F(\text{rate}, \text{speed}, \text{num\_beamlets}, \text{j-beamlet})$

# X (1-2%)



Results			
Plot system ver. Nov 22 2011 14:18:59			
<b>Laser:</b>			
rms size	$\langle x^2 \rangle_0 = 0.16167,$	$\langle y^2 \rangle_0 = 0.16166,$	[mm]
<b>Electron beam:</b>			
<b>Momentum gun:</b>	6.60600	$\pm 0.0447,$	[MeV/c]
<b>Momentum boo:</b>	24.72700	$\pm 0.0596,$	[MeV/c]
$\sigma_{\text{yag}}$	0.45630		[mm]
$\sigma_{\text{scan}}$	0.19850		[mm]
<b>divergence</b>	0.08565		[mrad]
<b>covariance</b>	0.01535		[mm mrad]
<b>sheared div</b>	0.00731		[mrad]
$\epsilon_{\text{sheared}}^{\text{scaled}}$	0.738		[mm mrad]
$\epsilon_{\text{noscaled}}^{\text{scaled}}$	0.354		[mm mrad]
$\epsilon_{\text{2D}}^{\text{scaled}}$	0.813		[mm mrad]
Comments: EMSYIX_388A_2011_05_29_18_41_21_from67_60-to69_90_fast			

# Y (1-2%)



Results			
Plot system ver. May 29 2011 09:16:31			
Laser:	rms size	$\langle x^2 \rangle_0 = 0.16167,$	$\langle y^2 \rangle_0 = 0.16166,$ [mm]
Electron beam:	Momentum gun:	6.60600	$\pm 0.0447,$ [MeV/c]
	Momentum boo:	24.72700	$\pm 0.0596,$ [MeV/c]
	$\sigma_{\text{yag}}$	0.15700	[mm]
	$\sigma_{\text{scan}}$	0.10054	[mm]
	divergence	0.05604	[mrad]
	covariance	0.00140	[mm mrad]
	sheared div	0.00546	[mrad]
	$\epsilon_{\text{sheared}}^{\text{scaled}}$	0.401	[mm mrad]
	$\epsilon_{2\text{D}}^{\text{noscaled}}$	0.264	[mm mrad]
	$\epsilon_{2\text{D}}^{\text{scaled}}$	0.412	[mm mrad]

Comments: EMSY1Y\_388A\_2011\_05\_29\_\_19\_37\_11\_\_from65\_00-to66\_40\_fast

Results			
Plot system ver. Nov 22 2011 14:18:59			
Laser:	rms size	$\langle x^2 \rangle_0 = 0.16167,$	$\langle y^2 \rangle_0 = 0.16166,$ [mm]
Electron beam:	Momentum gun:	6.60600	$\pm 0.0447,$ [MeV/c]
	Momentum boo:	24.72700	$\pm 0.0596,$ [MeV/c]
	$\sigma_{\text{yag}}$	0.15700	[mm]
	$\sigma_{\text{scan}}$	0.09840	[mm]
	divergence	0.05602	[mrad]
	covariance	0.00137	[mm mrad]
	sheared div	0.00534	[mrad]
	$\epsilon_{\text{sheared}}^{\text{scaled}}$	0.401	[mm mrad]
	$\epsilon_{2\text{D}}^{\text{noscaled}}$	0.258	[mm mrad]
	$\epsilon_{2\text{D}}^{\text{scaled}}$	0.412	[mm mrad]

Comments: EMSY1Y\_388A\_2011\_05\_29\_\_19\_37\_11\_\_from65\_00-to66\_40\_fast