

The Beam Profile Analysis

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The Algorithm:

1. No background subtraction this time.
2. M4 intensity is normalized by M1 intensity.
3. Centroid is calculated according to:

$$\bar{y} = \frac{\sum y_i A_i}{\sum A_i} =$$

$$\bar{x} = \frac{\sum x_i A_i}{\sum A_i} =$$

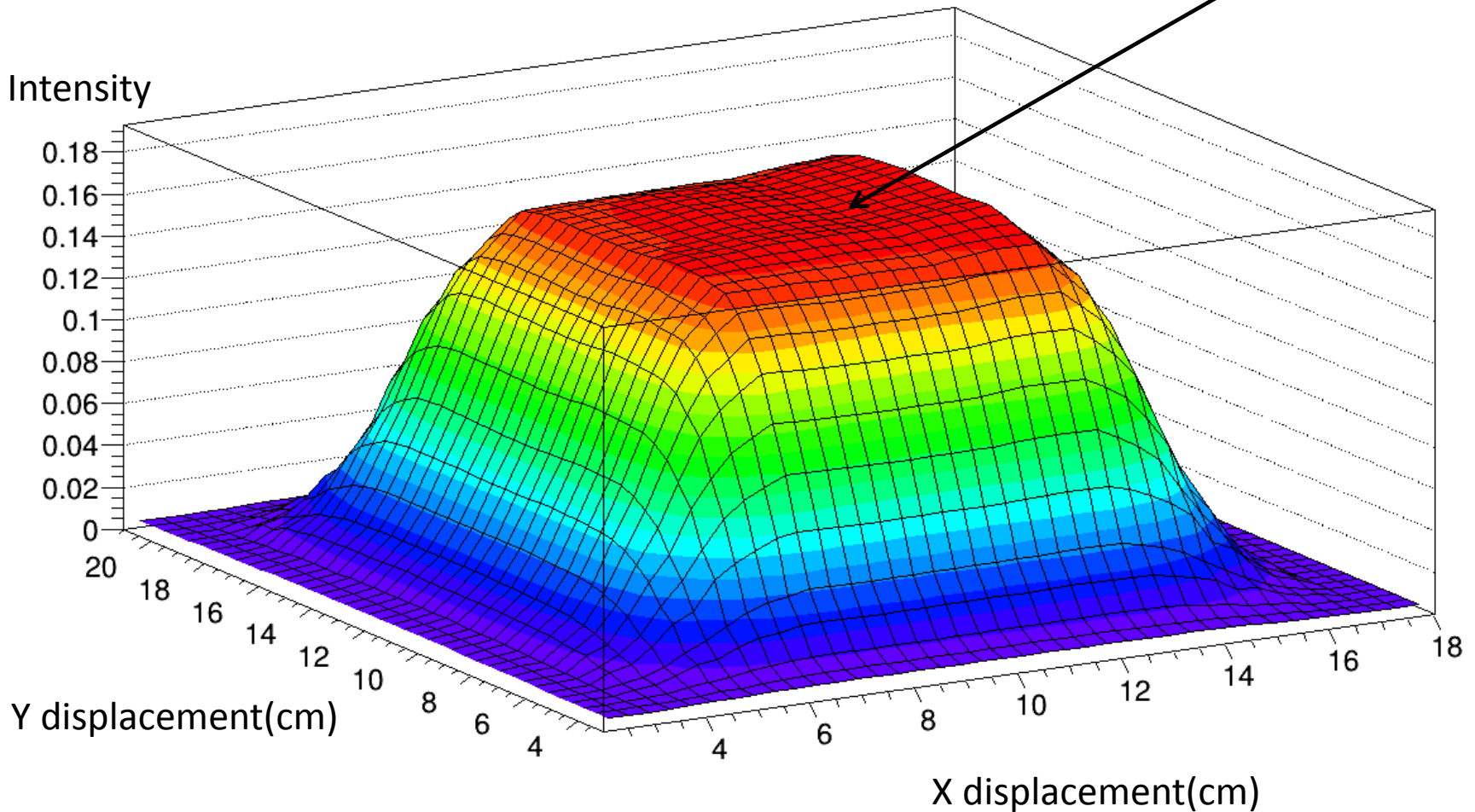
Upstream Beam

17x19 Grid with 1cm separation, No background subtraction, beam normalized

Graph2D Surface Plot

Centroid(10.0413,12.0481)

Intensity



TGraph2D Surface Plot

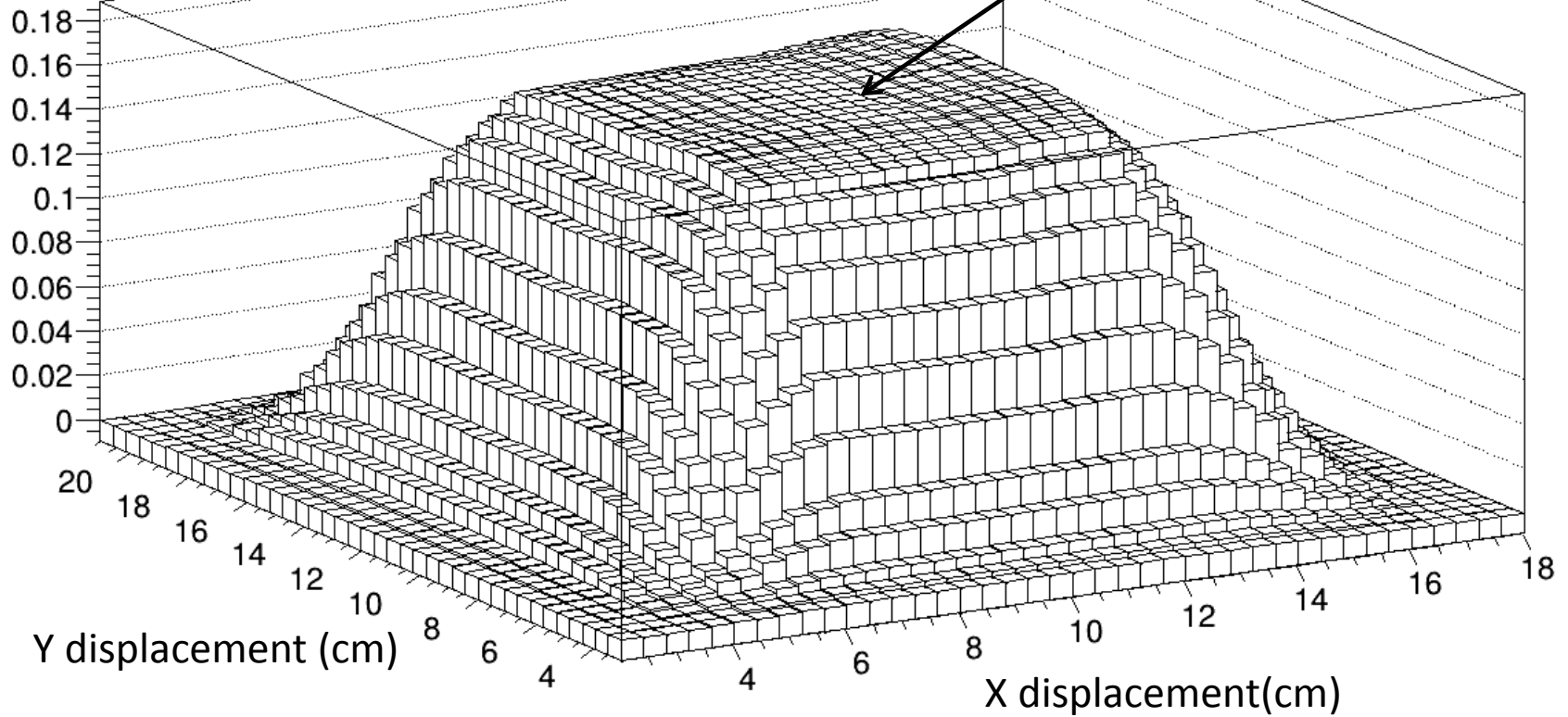
Upstream Beam

17x19 Grid with 1cm separation, No background subtraction, beam normalized (Lego view)

Graph2D Surface Plot

Centroid(10.0413,12.0481)

Intensity

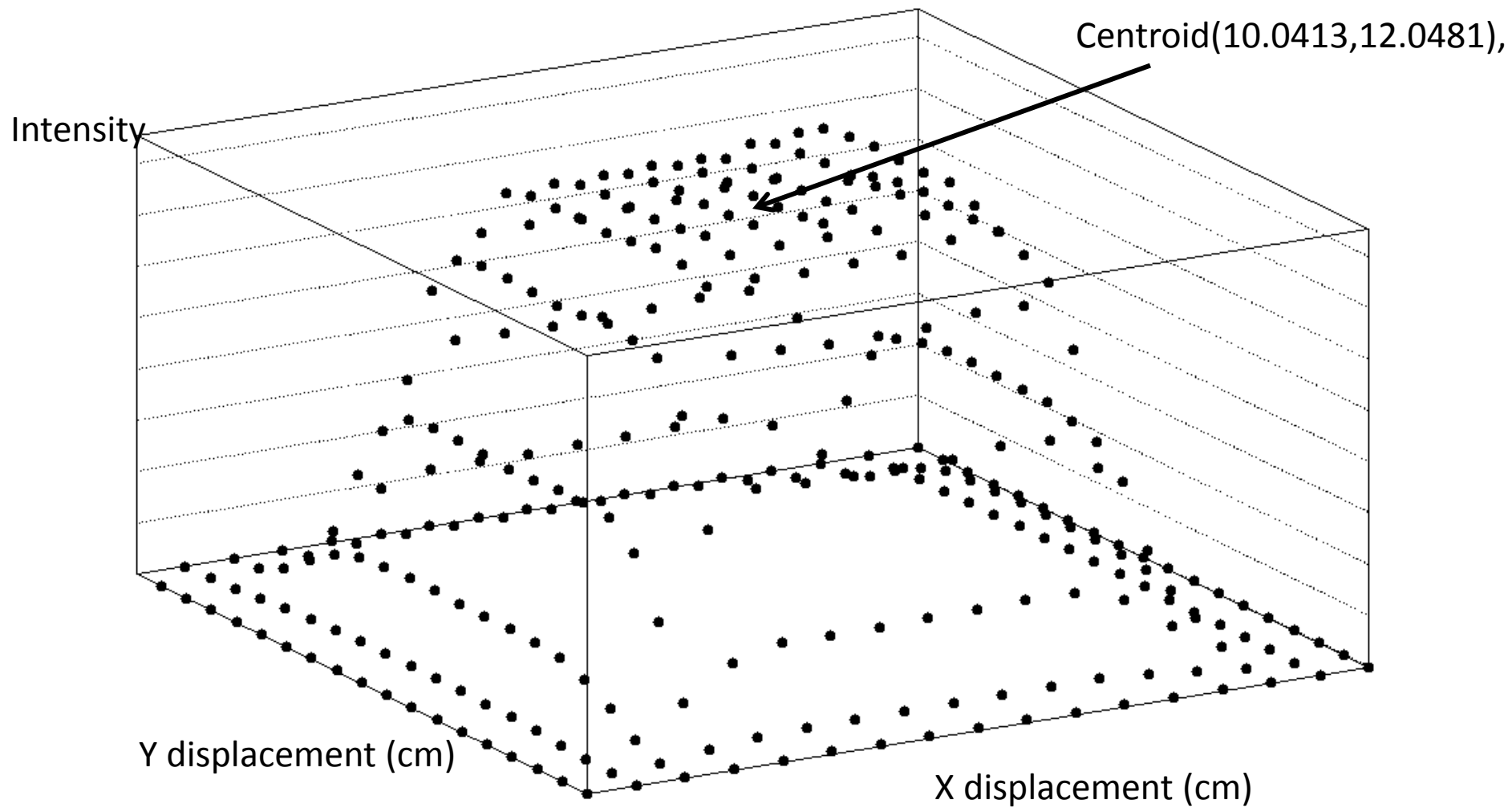


Upstream Beam

17x19 Grid with 1cm Separation, no background subtraction and normalized by M1

Graph2D

Surface Plot

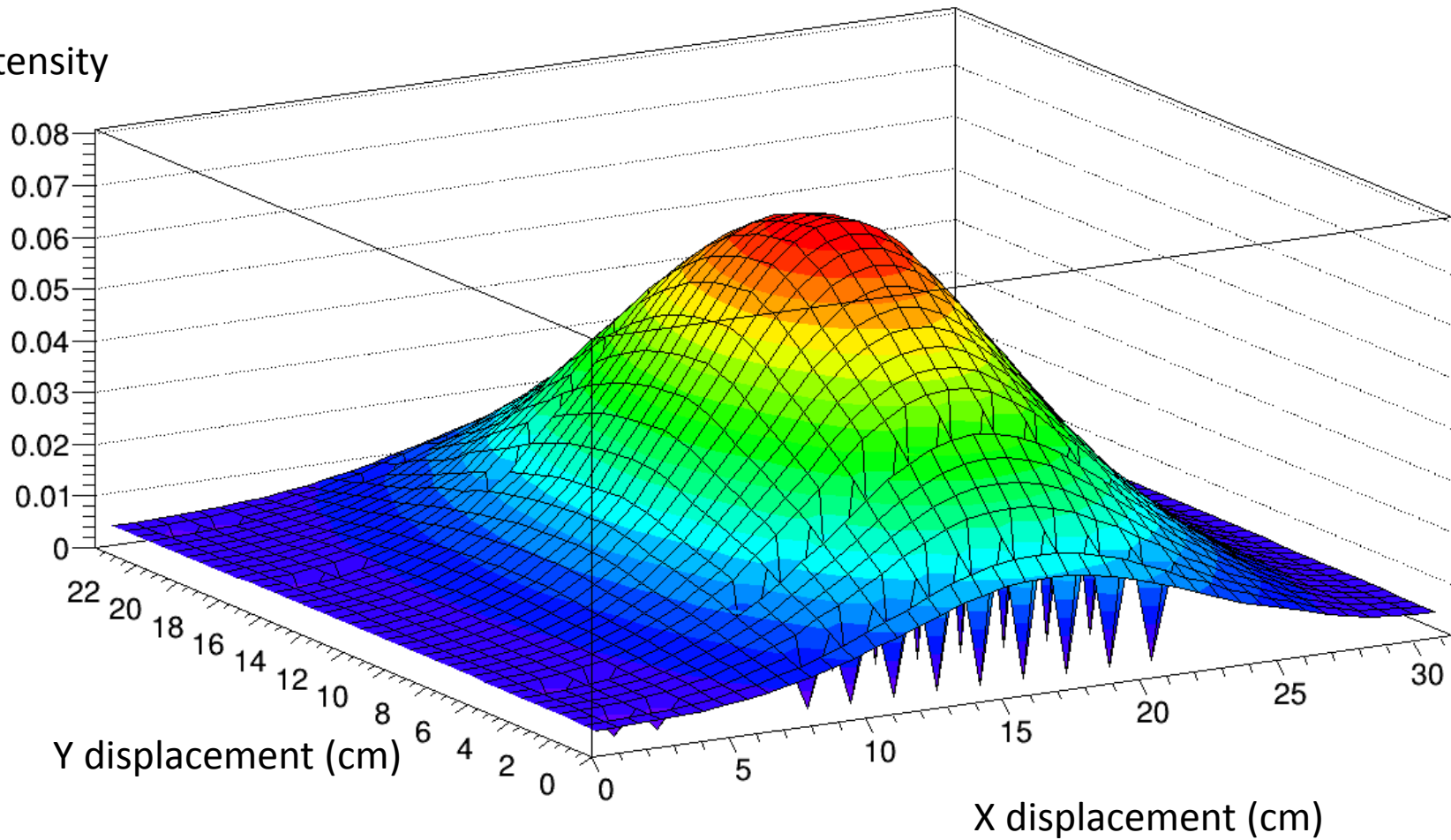


Downstream Beam

22x17 Grid (1.5 cm spacing) : Beam normalized ,No background Subtraction

Graph2D

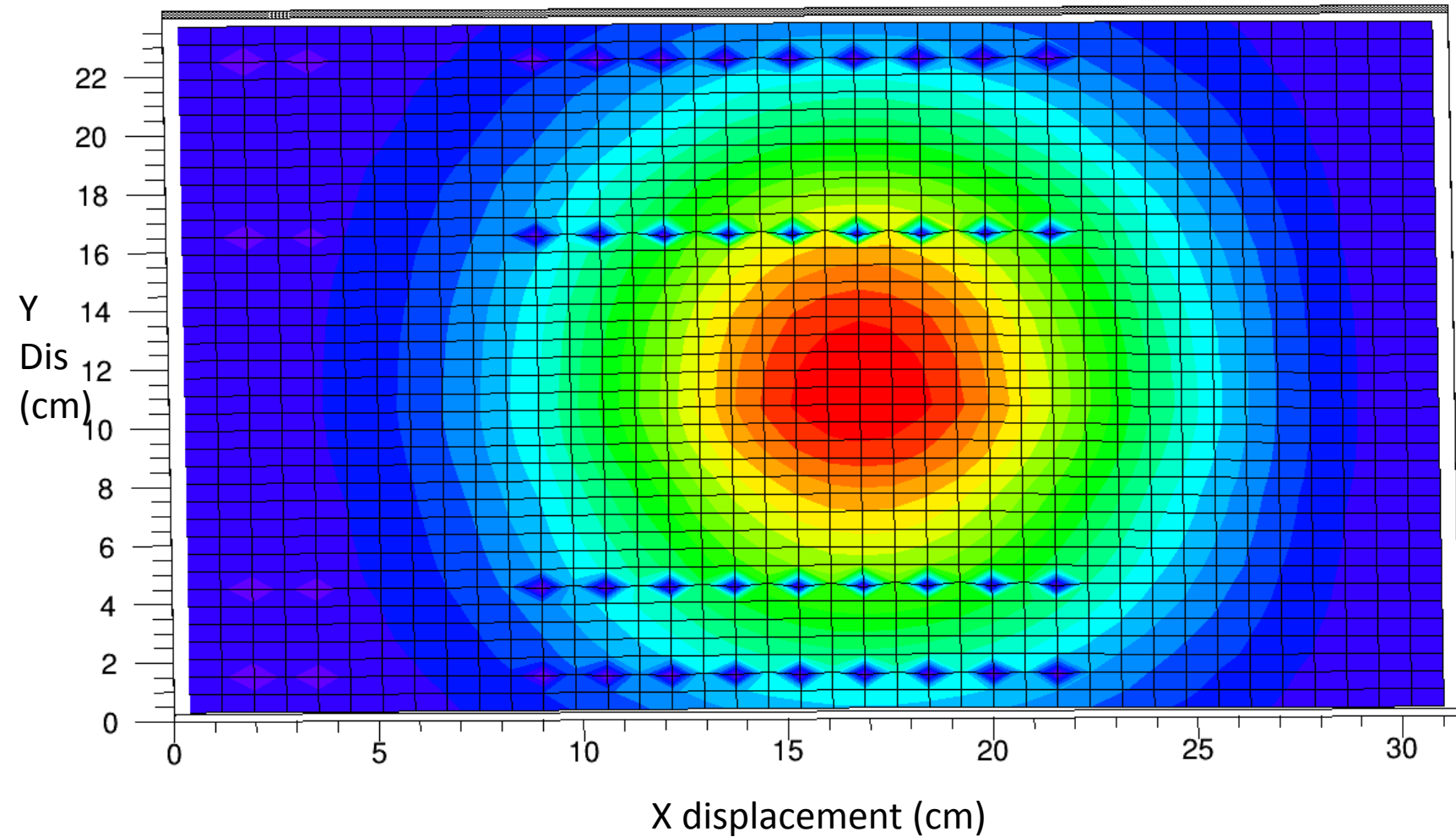
Intensity



Downstream Beam

22x17 Grid (1.5 cm spacing) :Beam normalized ,No background Subtraction

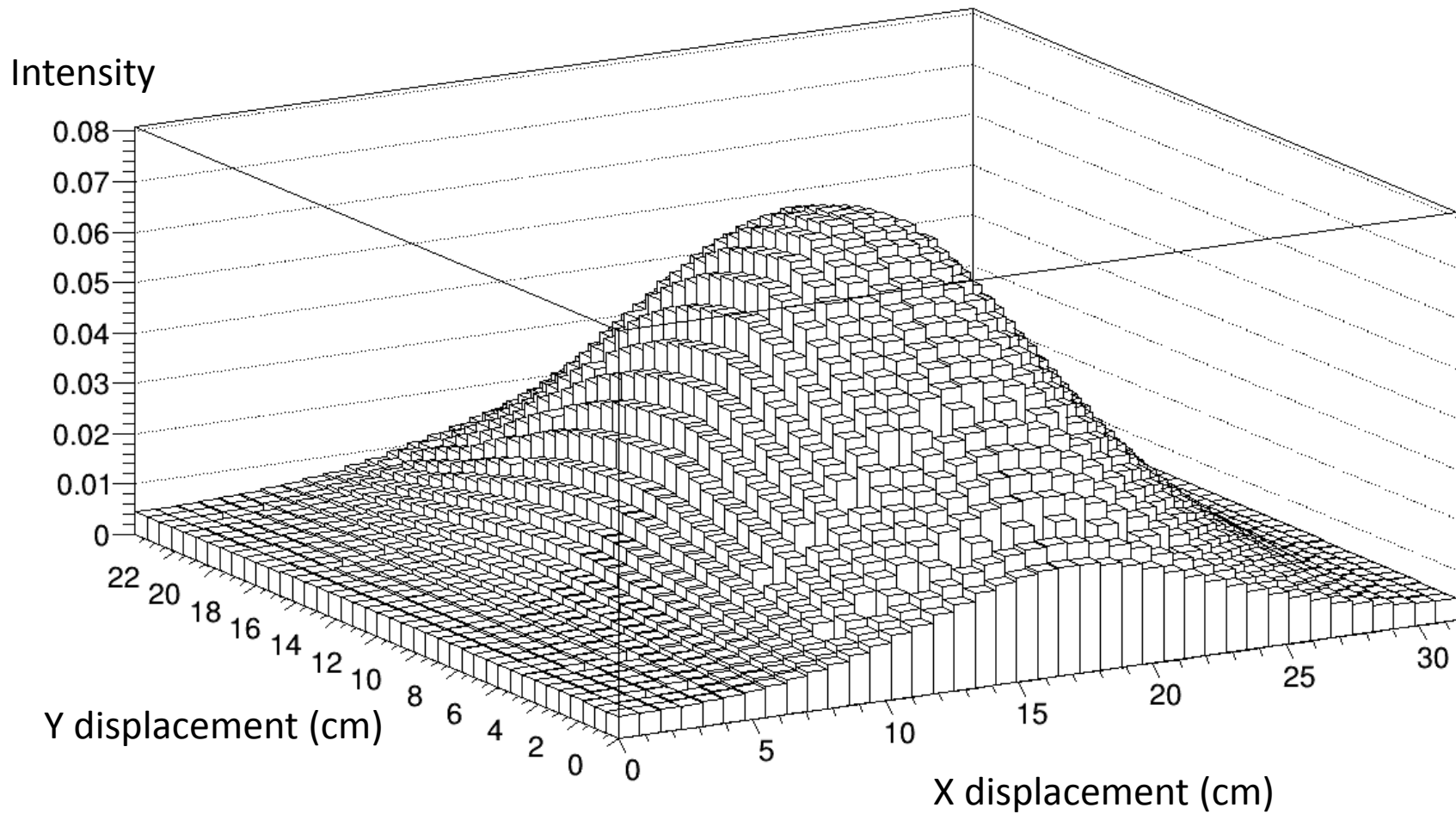
Graph2D



Downstream Beam

22x17 Grid (1.5 cm spacing) : Beam normalized ,No background Subtraction(Lego view)

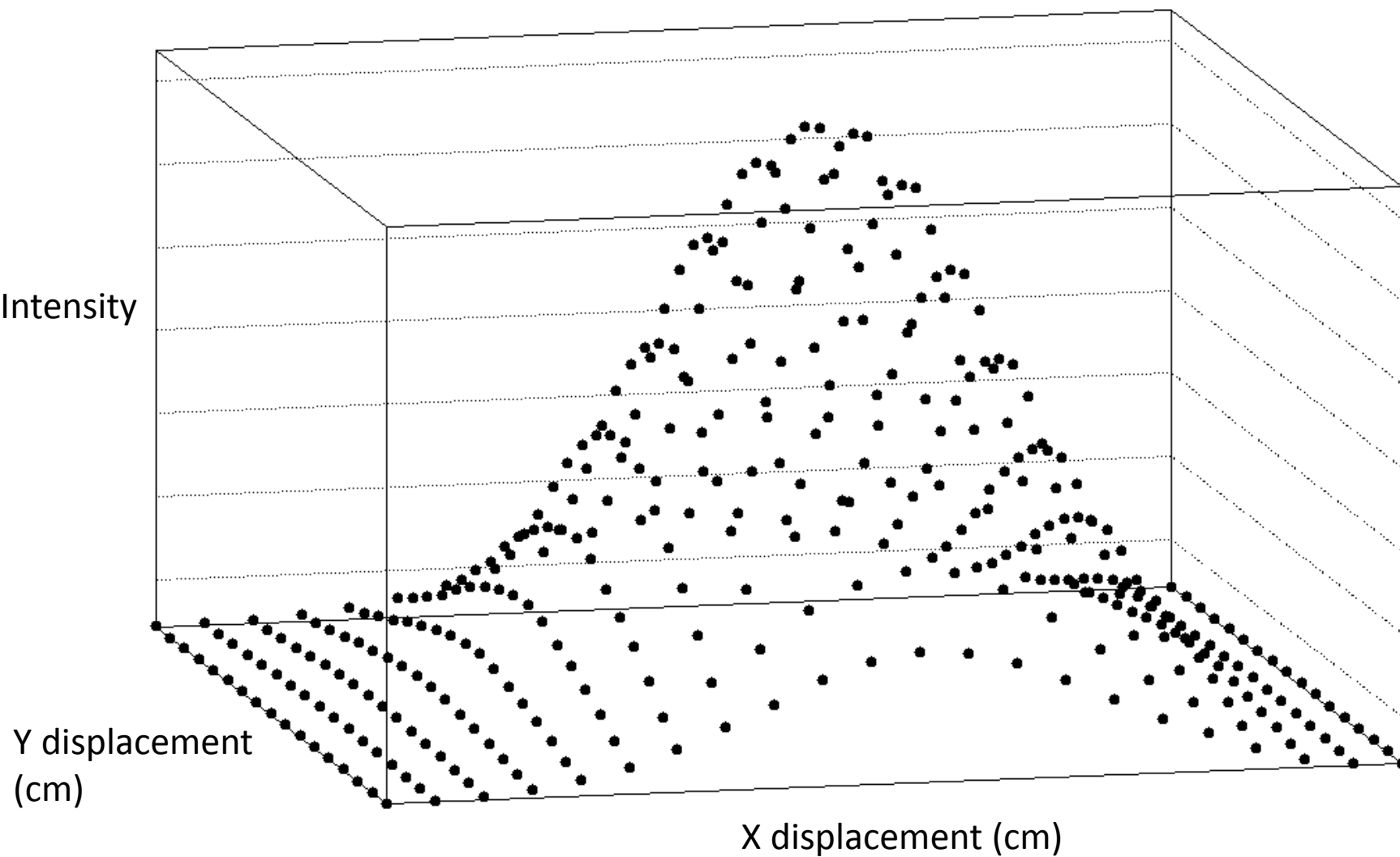
Graph2D



Downstream Beam

22x17 Grid (1.5 cm spacing) : Beam normalized ,No background Subtraction

Graph2D



Result:

Beam centroid (Upstream): $X=10.0413$ cm $Y=12.0481$ cm

Beam centroid (Downstream): $X=16.6353$ cm $Y=11.6274$ cm

Distances are from home position.