

Assignment 4:-

1. Instead of the 2 view triangulation, use 8-views therefore there are 16 equations in 4 variables, take svd of this and the last column of the right singular vectors, divide all coordinates by the fourth row value - this gives 3D point in homogeneous coordinates, plot the 3 coordinates - comes out as a cube.

2. I read through the codes and got an overview, in the testLM code only the damping coefficient indicating in trust region or not had to be changed and a condition for termination had to be checked if the condition was false, the error with updated p was to be checked if it was low, the update was done - the updates are same as Gauss-Newton.

Output of testLM code :

Number of total iterations: 50 Number of successful steps: 15 Number of unsuccessful steps: 7
Estimated parameters of the Gaussian:
ans =

Columns 1 through 2

10.0000 -0.0000

Column 3

20.0000

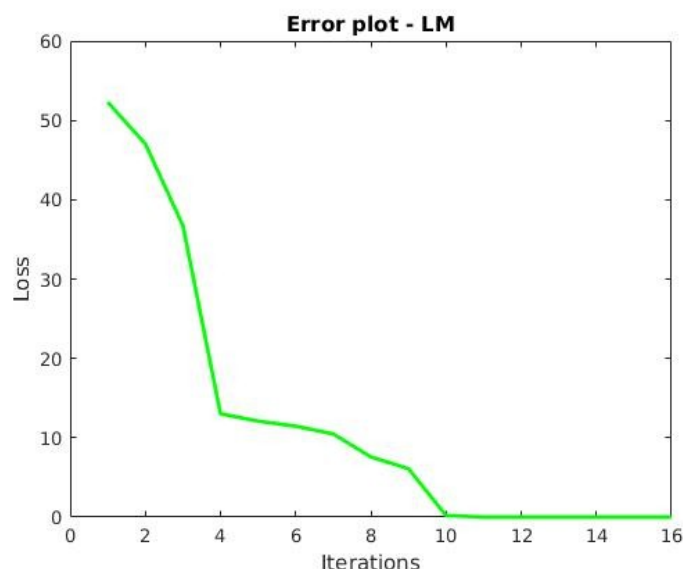
True parameters of the Gaussian:
ans =

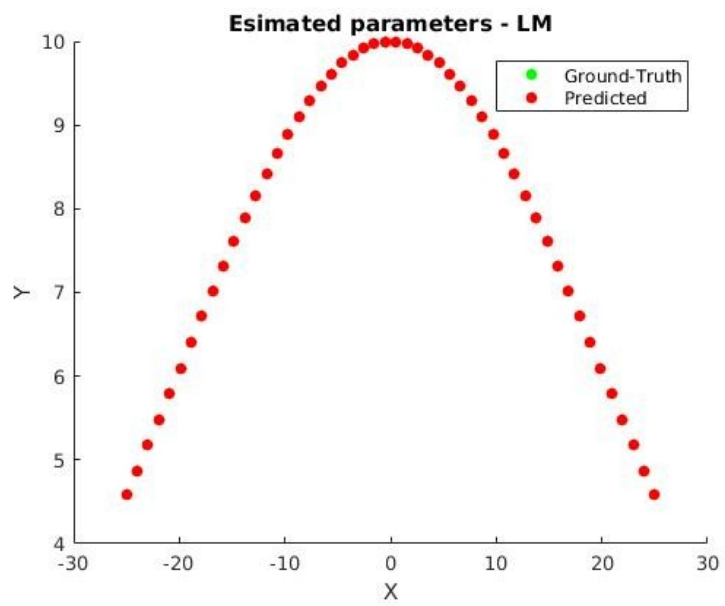
10 0 20

Difference in estimated and true parameters:
ans =

9.9598e-17

The error is low





The reconstructed synthetic cube:

