

# Data Adj. II, HW1

assigned 3 Oct 2017, due next week Thursday 12 Oct.

Compare 2 photo BBA with

(a) minimal constraints ( $2\frac{1}{3}$  C.P.'s)

(b) inner constraints

7	8	9
4	5	6
1	2	3

C.P.	X	Y	Z
1	960.0	1930.0	100.0
6	—	—	100.0
7	962.0	2070.0	98.0

image measurements uncorrelated

$$\sigma = 0.010 \text{ mm}$$

$$\text{focal length} = 100.0 \text{ mm}$$

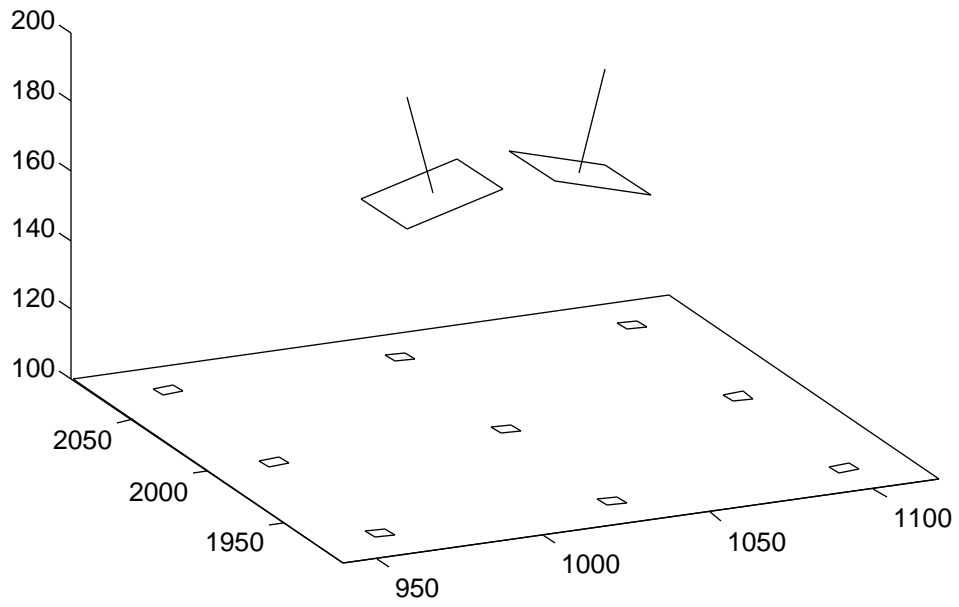
$$x_0, y_0 = (0, 0)$$

for both (a) and (b) implement the constraints with a  $7 \times 39$  constraint matrix

initial approximations for camera FOP's:

$$\begin{bmatrix} \omega \\ \phi \\ K \\ x_L \\ y_L \\ z_L \end{bmatrix} : \begin{bmatrix} 0^\circ \\ -15^\circ \\ 0^\circ \\ 1000 \\ 2000 \\ 200 \end{bmatrix} \text{ left } , \begin{bmatrix} 0^\circ \\ +15^\circ \\ 0^\circ \\ 1060 \\ 2000 \\ 200 \end{bmatrix} \text{ right}$$

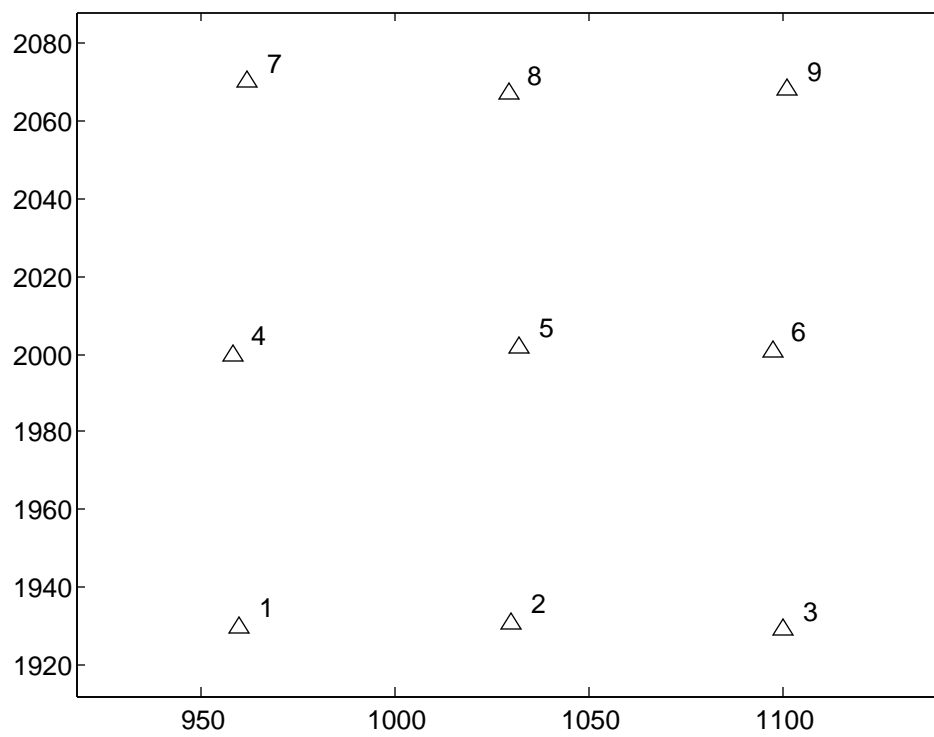
overview of 2 photo BBA problem



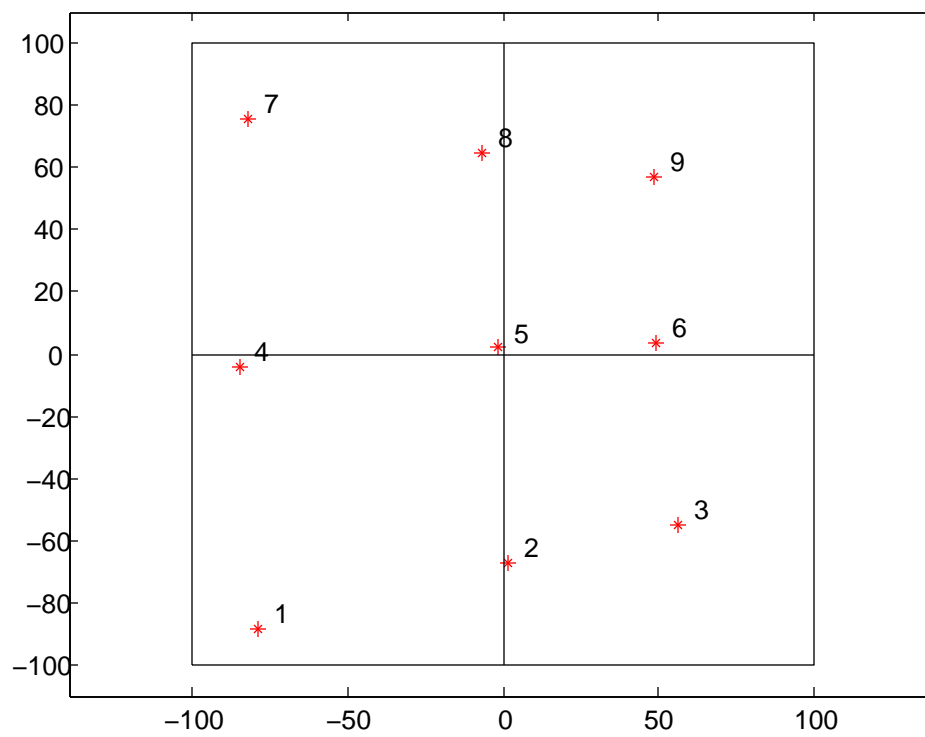
id	x1	y1	xr	yr
1	-78.882	-88.126	-54.736	-52.270
2	1.440	-66.953	-2.518	-64.203
3	56.262	-55.012	76.337	-85.798
4	-84.802	-4.189	-55.011	3.098
5	-1.466	1.971	1.808	3.294
6	49.164	3.573	75.389	0.276
7	-82.174	75.574	-51.392	59.846
8	-6.732	64.609	-0.533	68.499
9	48.872	56.913	86.001	84.036

img\_dat

XY plot of ground points



xy plot of left image points



xy plot of right image points

