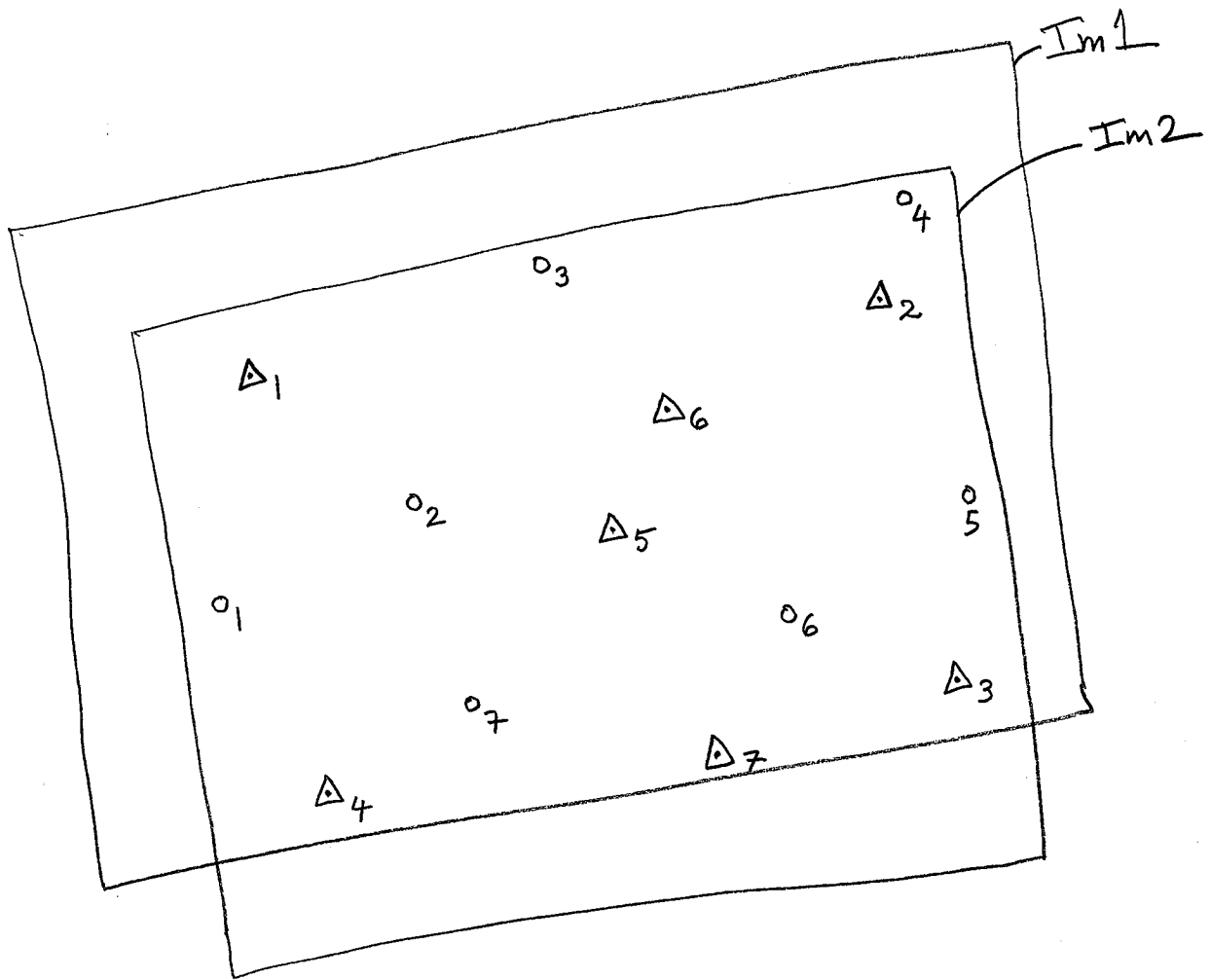


# Control & Tie Points for 2 Image BBA



Need functions implementing physical model with augmented arguments  
 image specifier 1,2

$$\begin{bmatrix}
 \frac{\partial F_\phi}{\partial x} & \frac{\partial F_\phi}{\partial s} & \frac{\partial F_\phi}{\partial q_L} & \frac{\partial F_\phi}{\partial q_j} & \frac{\partial F_\phi}{\partial q_k} & \frac{\partial F_\phi}{\partial q_s} & \frac{\partial F_\phi}{\partial \phi} & \frac{\partial F_\phi}{\partial \lambda} & \frac{\partial F_\phi}{\partial h} & F_\phi \\
 \frac{\partial F_\lambda}{\partial x} & \frac{\partial F_\lambda}{\partial s} & \frac{\partial F_\lambda}{\partial q_i} & \frac{\partial F_\lambda}{\partial q_j} & \frac{\partial F_\lambda}{\partial q_k} & \frac{\partial F_\lambda}{\partial q_s} & \frac{\partial F_\lambda}{\partial \phi} & \frac{\partial F_\lambda}{\partial \lambda} & \frac{\partial F_\lambda}{\partial h} & F_\lambda
 \end{bmatrix} = \text{fizg-pl-0-part}(im, l, s, h, \phi, \lambda, dp)$$

$\swarrow$  image specifier 1,2  
 $\nwarrow$  dp's for images 1,2

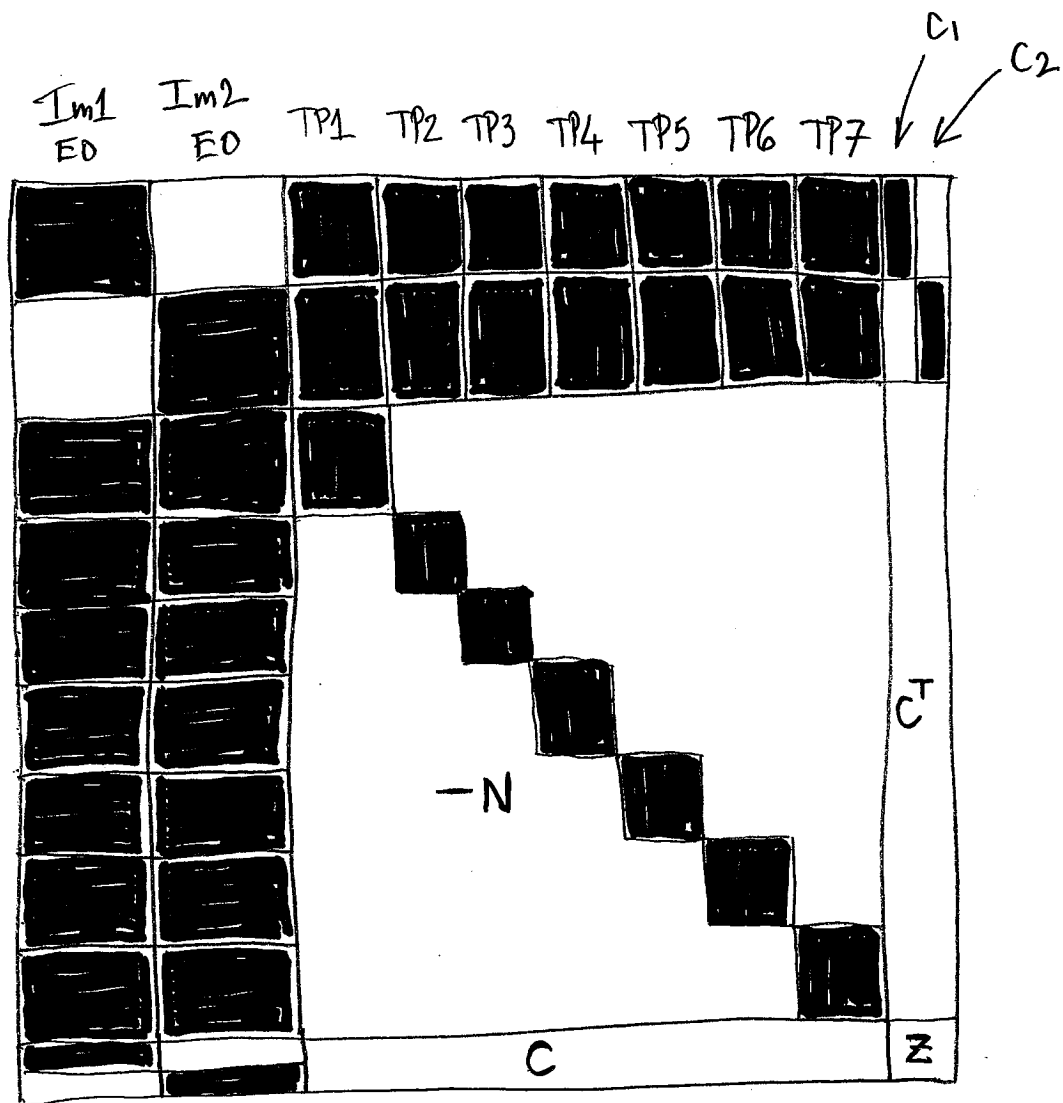
main script for 2 image BBA must read in support data for 2 images & access via index variable "im"

	Im1 EO	Im2 EO	TP1	TP2	TP3	TP4	TP5	TP6	TP7
Im1 CP	█								
	█								
	█								
	█								
	█								
	█								
Im1 TP	█		█						
	█			█					
	█				█				
	█					█			
	█						█		
	█							█	
Im2 CP		█							
		█							
		█							
		█							
		█							
		█							
Im2 TP		█							
		█		█					
		█			█				
		█				█			
		█					█		
		█						█	

↓  
↑ 2 egn's

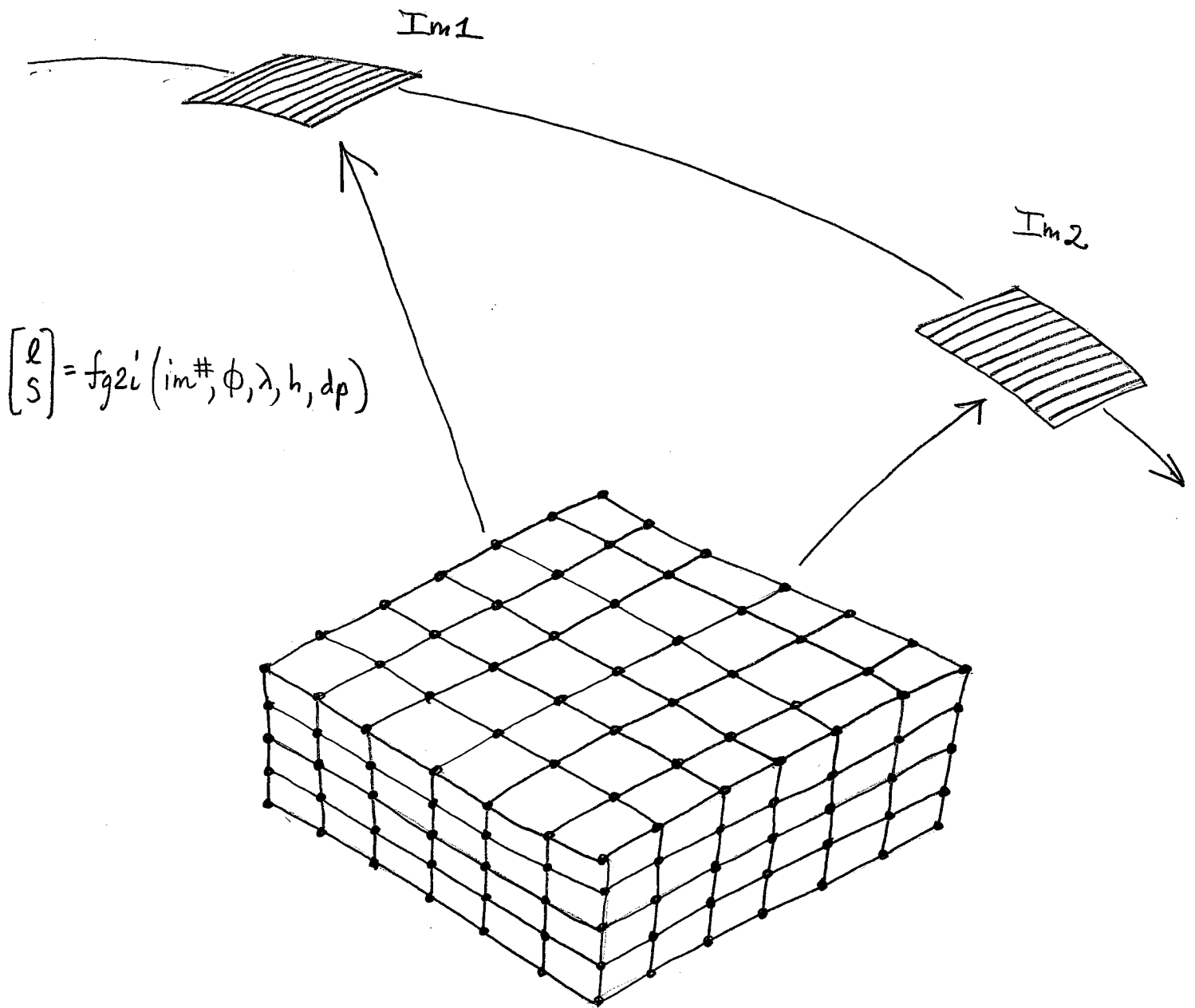
$$\begin{aligned}
 n &= 56 \\
 n_b &= 3 \times 2 + 3 \times 7 \\
 &= 27 \\
 r &= 29 \\
 u &= 4 \times 2 + 3 \times 7 \\
 &= 29 \\
 c &= 56 \\
 s &= 2 \\
 c + s &\stackrel{?}{=} r + u \\
 56 + 2 &= 29 + 29 \\
 58 &= 58 \\
 &\checkmark
 \end{aligned}$$

2 Image BBA condition equation coefficient matrix



Normal Equation Matrix for 2 Image BBA

$$\begin{bmatrix} -N & C^T \\ C & 0 \end{bmatrix} \begin{bmatrix} \Delta \\ k_c \end{bmatrix} = \begin{bmatrix} -t \\ g \end{bmatrix}$$



7x7x5 grid enclosing the scene terrain  
(= 245)

245 perfectly matched  $\phi, \lambda, h, l, s$

Use the to write  $2 \times 245 = 490$  equations in 78 unknowns,

$$r_n = \frac{\sum_{i=1}^{20} P1_i \cdot f(P_i, L, h)}{\sum_{i=1}^{20} P2_i \cdot f(P_i, L, h)}$$

$$c_n = \frac{\sum_{i=1}^{20} P3_i \cdot f(P_i, L, h)}{\sum_{i=1}^{20} P4_i \cdot f(P_i, L, h)}$$

solve by

$$\Delta = N^+ t$$

+ format new coefficients into \*.rpb format