

~~$X = AS$        $WX = WAS$~~

$\downarrow$                        $\downarrow$

$Y$                        $B$

$Y = BS$

target:  $Y \rightarrow B, S$ .

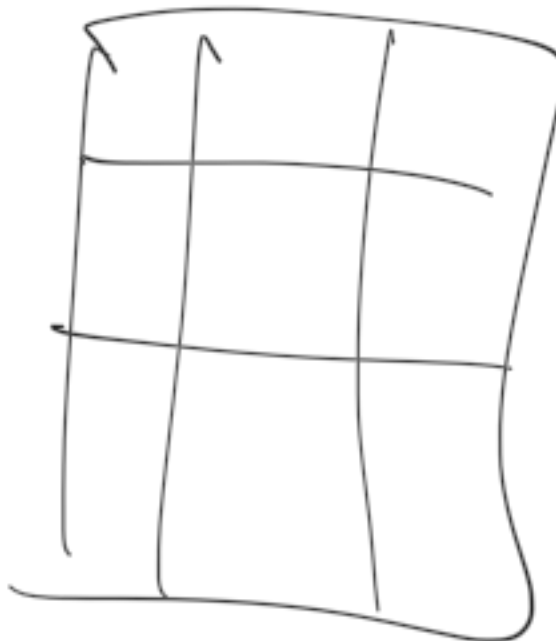
Assumption:  $S$ : independent  $\rightarrow$  uncorrelated,  $S \cdot S^T = I$ .

$Y \cdot Y^T = I$   $\Rightarrow$   $B \cdot B^T = B^T B = I$ .

$B = \begin{pmatrix} b_{11} & b_{12} \\ b_{21} & b_{22} \end{pmatrix}$

$\Leftrightarrow$   
 $b_{11}^2 + b_{21}^2 = 1$

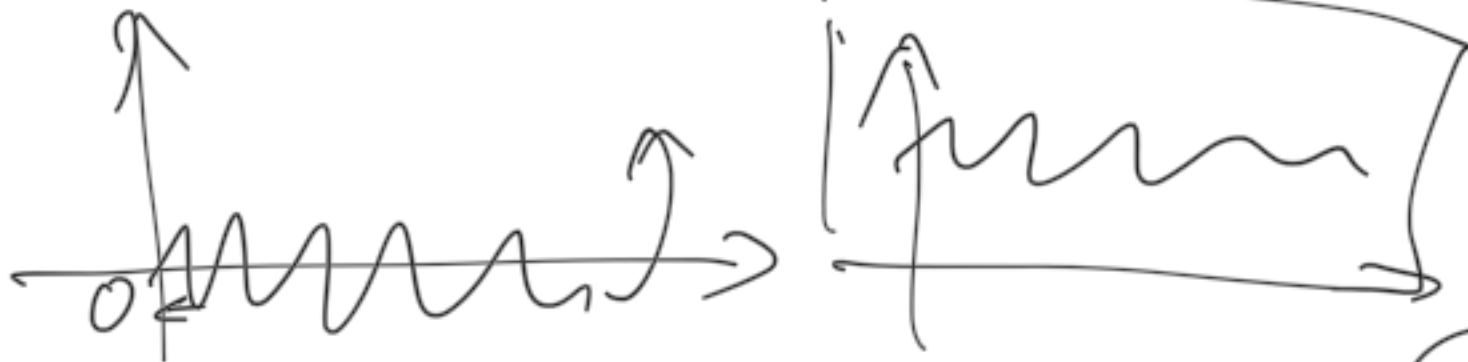
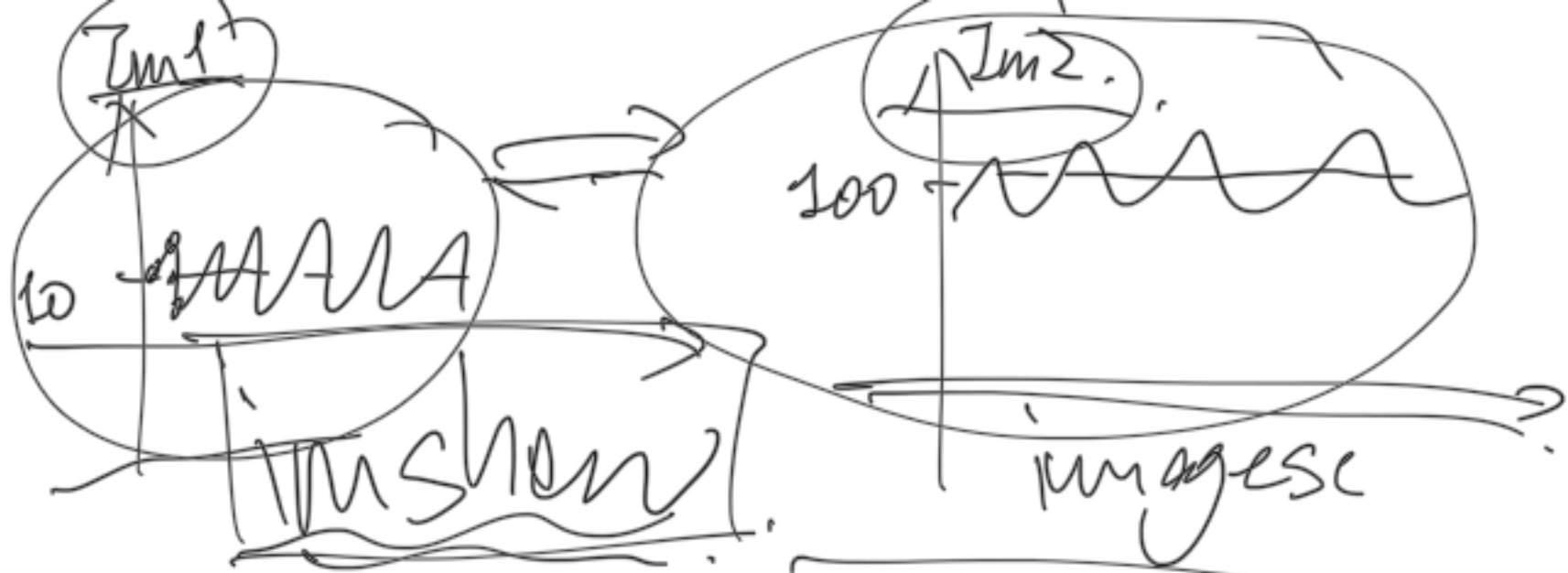
We don't have:  $b_{11} + b_{12} = 1$



1. positive.  
> dimension - 1

example: ipg

(inslow)



imshow(I).

par: default:

int  
double.  
float.

$\downarrow$   
0: black.  
255: white

imshow(I, [ I ])

$\downarrow$   
min: black  
max: white

$$X = A \cdot S$$

$$\begin{pmatrix} X_1 \\ X_2 \end{pmatrix} = \begin{pmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{pmatrix} \cdot \begin{pmatrix} S_1 \\ S_2 \end{pmatrix}$$

$$\begin{aligned} \Rightarrow X_1 &= A_1 \cdot S_1 \\ \Rightarrow X_2 &= A_2 \cdot S_2 \\ \Rightarrow X_3 &= A_3 \cdot S_3 \\ &\vdots \end{aligned}$$

$S_{11}$	$S_{21}$	$S_{31}$
$S_{12}$	$S_{22}$	$S_{32}$

$S_{12}$	$S_{22}$	$S_{32}$
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$S_{11}$	$S_{12}$
$S_{21}$	$S_{22}$



other side.  
near side