Taxea : Métodos de Matrices con osciladans acoplados

(a) (u) ay eigenvalors & eigen vectores as $-\left(\frac{K+K'}{-K'}, \frac{K'}{K+K'}\right)\left(\frac{X_1}{X_2}\right)$ $-\left(\frac{K+K'}{-K'}, \frac{K'}{K+K'}\right)\left(\frac{X_1}{X_2}\right)$ $\left(\frac{-(K+K')}{+K'}, \frac{+K'}{-(K+K')}\right)\left(\frac{X_1}{X_2}\right)$ $det\left(\frac{K-\lambda I}{K}\right) = det\left(\frac{-K-K'-\lambda}{K'}, \frac{+K'}{-K-K'-\lambda}\right)$ $=\left(\frac{-K-K'-\lambda}{\lambda}\right)\left(\frac{-K-K'-\lambda}{K'}, \frac{+K'}{-K'-\lambda}\right)$ $=\left(\frac{-K-K'-\lambda}{\lambda}\right)\left(\frac{-K-K'-\lambda}{K'}, \frac{-K'-\lambda}{\lambda}\right)$ $=\left(\frac{-K-K'-\lambda}{K'}, \frac{-\lambda}{\lambda}\right) = 0$ $\lambda_1 = -K$ $\lambda_2 = -K-2K'$ $\lambda_3 = -K-2K'$ $\lambda_4 = -K-2K'$ $\lambda_4 = -K-2K'$ $\lambda_4 = -K-2K'$ $\lambda_5 = \left(\frac{K'}{K'}, \frac{K'}{K'}\right)\left[\frac{X}{Y}\right] = \left(\frac{0}{0}\right)$ $K'X+K'Y=0$ $K'X$		ollobiatio 2			
	(a) rular eigenvulo	no le eigen ve	ctores as	g ((0)	distributed by a st
	$-\begin{pmatrix} K+K' & -K' \\ -K' & K+K' \end{pmatrix}$) (X1)	(1)[XI-[X	01
	/K	À		10	A A
$det(K-\lambda I) = det - K-K'-\lambda + K'$ $= (-K-K'-\lambda)(-K-K'-\lambda) - (K')^2 = 0$ $= (-K-K'-\lambda)^2 - (K')^2$ $= (-K'-K'-\lambda)^2 - (K')^2$ $= (-K'-K'-\lambda)^2$					CALLAND T
$det(K-\lambda I) = det - K-K'-\lambda + K'$ $= (-K-K'-\lambda)(-K-K'-\lambda) - (K')^2 = 0$ $= (-K-K'-\lambda)^2 - (K')^2$ $= (-K'-K'-\lambda)^2 - (K')^2$ $= (-K'-K'-\lambda)^2$	(-(K+K,)+K,	\ (X)	00.1		
$det(K-\lambda I) = det - K-K'-\lambda + K' $			0.55.1		
$det(K-\lambda I) = det -K-K'-\lambda + K' = (-K-K'-\lambda)(-K-K'-\lambda) - (K')^{2} = 0$ $= (-K-K'-\lambda)^{2} - (K')^{2}$ $= (-K-K'-\lambda)^{2}$ $= (-K-K'-\lambda)^{2} - (K')^{2}$ $= (-K-K'-\lambda)^{2}$					
$det(K-\lambda I) = det -K-K'-\lambda + K' \\ k' -K-K'-\lambda \\ = (-K-K'-\lambda)(-K-K'-\lambda) - (K')^{2} = 0$ $= (-K-K'-\lambda)^{2} - (K')^{2} \\ = (-K-K'-\lambda)^{2} - (K')^{2} - (K')^{2} \\ = (-K-K'-\lambda)^{2} - (K')^{2} - (K')^{2} \\ = (-K-K'-\lambda)^{2} - (K')^{2} -$	1.47% 0.70244		6.0		JOD THE
$det (IK - \lambda I) = det -k - k' - \lambda + k' \\ k' - k - k' - \lambda $ $= (-K - k' - \lambda) (-K - k' - \lambda) - (K')^{2} = 0$ $= (-K - k' - \lambda + k') (-K - k' - \lambda - k')$ $(-K - \lambda) (-K - 2k' - \lambda) = 0$ $\lambda_{1} = -K$ $\lambda_{2} = -K - 2k'$ $\lambda_{3} = -K - 2k'$ $\lambda_{4} = -K$ $\lambda_{5} = -K - 2k'$ $\lambda_{7} = K' + K'$	det (K-AI)	= 0 610.5		0.4	
	684 V 4414	80.44.6		0 1 - 1	
	det (IK - XI) =	det -K-K'	-y + K,		
				di com	1, 20,00 00
	= (-K-K,-Y) (-	K-K-N) -	(K1)2	= 0
	p 000 0000 =	(-K-K-2)2	- (K')2 - (1 2 4	
$(-K-A)(-K-2K'-A)=0$ $A_1 = -K$ $A_2 = -K-2K'$ Ahora los eigenvectores. $\begin{bmatrix} K' & K' \end{bmatrix} \begin{bmatrix} X \\ Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} -K' & +K' \\ K' & -K' \end{bmatrix} \begin{bmatrix} X \\ Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} -K' & +K' \\ X' & -K' \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} -K' & +K' $					
$A_{1} = -K$ $A_{2} = -K - 2K'$ $A_{1} = -K$ $A_{2} = -K - 2K'$ $A_{2} = -K - 2K'$ $A_{3} = -K - 2K'$ $A_{4} = -K - 2K'$ $A_{5} = -K - 2K'$ $A_{6} = -K'$ $A_{6} = -K'$ $A_{7} = -K'$					
Ahora los eigenvectores $\begin{bmatrix} K' & K' \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} -K' + K' \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} K' & + K' \\ 0 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} K' & + K' \\ 0 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} K' & + K' \\ 0 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} K' & + K' \\ 0 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$	(-K-Y)(-K-	2K'-1) =	0 11 94	griften in	0.01 94
Ahora lus eigenvectores $\begin{bmatrix} K' & K' \end{bmatrix} \begin{bmatrix} X \\ Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} -K' + K' \\ K' \end{bmatrix} \begin{bmatrix} X \\ Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} K' \times + K' y = 0 \\ K' \times + K' y = 0 \end{bmatrix}$ $\begin{bmatrix} X \\ Y \end{bmatrix} = \begin{bmatrix} -y \\ y \end{bmatrix} = \begin{bmatrix} -y \\ 1 \end{bmatrix}$ $\begin{bmatrix} X \\ Y \end{bmatrix} = \begin{bmatrix} -y \\ y \end{bmatrix} = \begin{bmatrix} -y \\ 1 \end{bmatrix}$	Hout in a	CONTENTS	Jackst fut		partonag age?
Ahora lus eigenvectores $\begin{bmatrix} K' & K' \end{bmatrix} \begin{bmatrix} X \\ Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} -K' + K' \end{bmatrix} \begin{bmatrix} X \\ Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} K' & + K' & Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} K' & + K' & Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} K' & + K' & Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} K' & + K' & Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} K' & + K' & Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} K' & + K' & Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} K' & + K' & Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} K' & + K' & Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$	A, = -K	12 F -K-	2K'		
Ahora (a) eigenvectores. $\begin{bmatrix} -k' + k' \end{bmatrix} \begin{bmatrix} x \end{bmatrix} = \begin{bmatrix} 0 \\ K' \end{bmatrix} \\ K' \end{bmatrix} \begin{bmatrix} x \end{bmatrix} = \begin{bmatrix} 0 \\ K' \end{bmatrix} \\ K' \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} K' \\ X \end{bmatrix} + K' \\ Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} K' \\ X \end{bmatrix} + K' \\ Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} K' \\ X \end{bmatrix} + K' \\ Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} K' \\ X \end{bmatrix} + K' \\ Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} K' \\ X \end{bmatrix} + K' \\ Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} X \\ Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} X \\ Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$ $\begin{bmatrix} X \\ Y \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$	t don our e juber	a ptwor of	Y TALL		Control service
		itores.	(K) K	1 × 1 =	101
$-K' \times + K' y = 0$ $K' \times + K' y = 0$ $K' \times - K' y = 0$ $[Y] = [Y] = [Y] = [Y] = 1$			K, K,	1 4	[0]
$-K' \times + K' y = 0$ $K' \times + K' y = 0$ $K' \times - K' y = 0$ $[Y] = [Y] = [Y] = [Y] = 1$	- K, + K, / X	= 0	L	100	
$-K' \times + K' y = 0$ $K' \times + K' y = 0$ $[X] = \begin{bmatrix} -9 \\ y \end{bmatrix} = y \begin{bmatrix} -1 \\ 1 \end{bmatrix}$ $K' \times -K' y = 0$	K' - K' \ j] [0]	K, X + K, A	= 0	X = - 4
5/ 3 × 2 0	1		1 1 1/1 1 1 1	.4.	, 1
5/ 3 × 2 0	-K'X + K'4 = 0		[x] [-4]	4 -1	
5/ 3 × 2 0	K'X -K' = 0		191 191	1 1	
$\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} y \\ y \end{bmatrix} = y \begin{bmatrix} 1 \\ 1 \end{bmatrix}$	X = q		F 1	r 7	
	[x] - [y] = y [1		1 &	-1	