

INTRODUÇÃO ÀS IMAGENS DIGITAIS E ÀS TÉCNICAS DE ANÁLISE DIGITAL:

Curso de Iniciação a Análise Digital de Dados de Sensoriamento Remoto

(Utilização)
(Formulário dos exercícios)
Respostas dos exercícios

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FIGURA 1
Imagem digital, 2 bandas, 7 x 7, linhas intercaladas

Início

5	3	4	5	4	5	5	5	5	4	6	7	7	7	2	2	3	4	4	4	6	2	4
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6	5	5	6	5	2	2	3	3	6	6	8	5	3	5	7	6	6	8	2	2	6	6
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9	8	7	3	4	5	6	8	8	7	3	6	8	8	8	7	4	3	5	8	8	8	7
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

1	3	6	8	7	2	3	2	4	5	8	7	1	0	0	4	6	7	3	3	2	1	3
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6	7	0	0	0	0
---	---	---	---	---	---

Fim

FIGURA 2
 Imagem digital na forma geométrica apropriada.

		PIXELS						
		1	2	3	4	5	6	7
L	1	5	3	4	5	4	5	5
I	2	2	2	3	4	4	4	6
N	3	2	2	3	3	6	6	8
H	4	2	2	6	6	9	8	7
A	5	3	6	8	8	8	7	4
S	6	3	6	8	7	2	3	2
	7	4	6	7	3	3	2	1

BANDA 'A'

		PIXELS						
		1	2	3	4	5	6	7
L	1	5	5	4	6	7	7	7
I	2	2	4	6	5	5	6	5
N	3	5	3	5	7	6	6	8
H	4	3	4	5	6	8	8	7
A	5	3	5	8	8	8	7	1
S	6	4	5	8	7	1	0	0
	7	3	6	7	0	0	0	0

BANDA 'B'

FIGURA 3
Mapas de níveis de cinza.

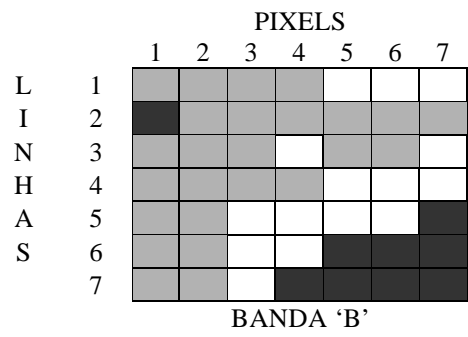
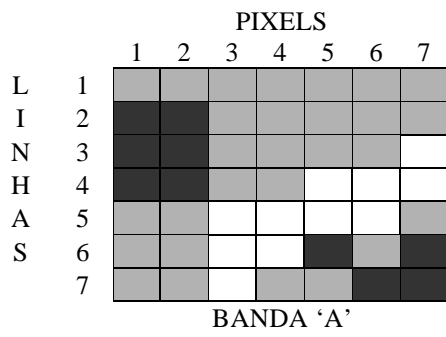


FIGURA 4
Perfil de intensidade

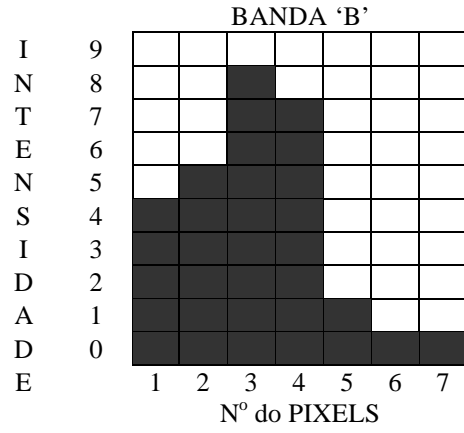
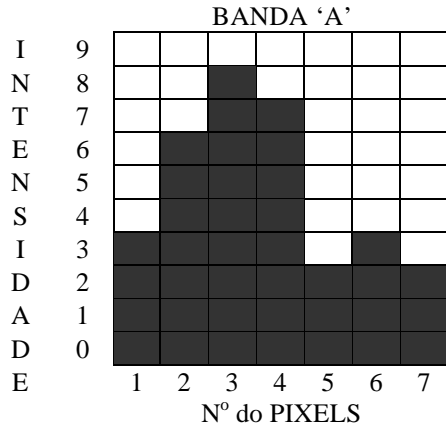


FIGURA 5
Histograma unidimensional

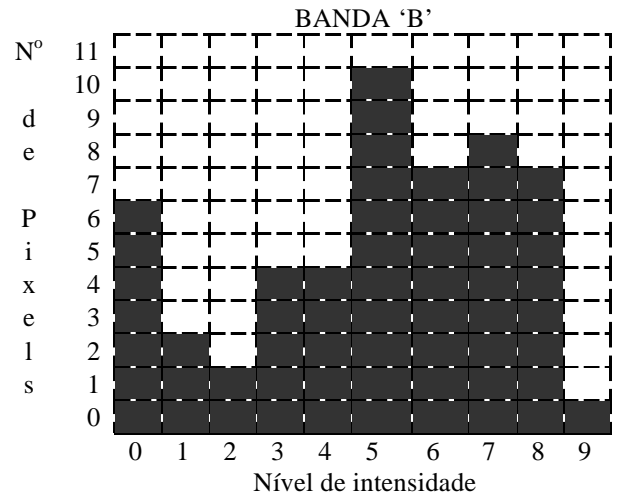
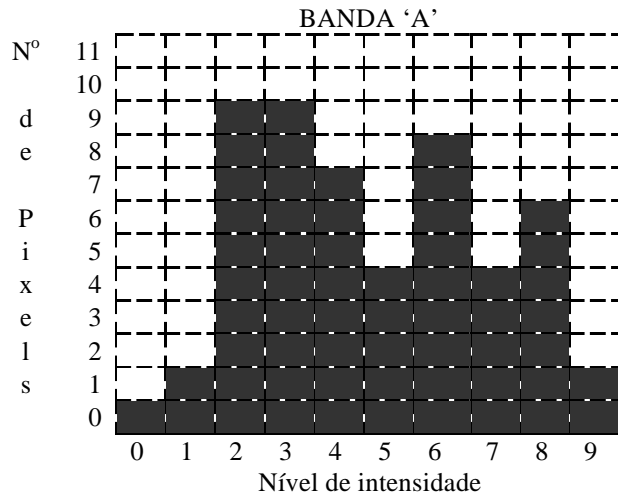


FIGURA 6
Histograma bidimensional

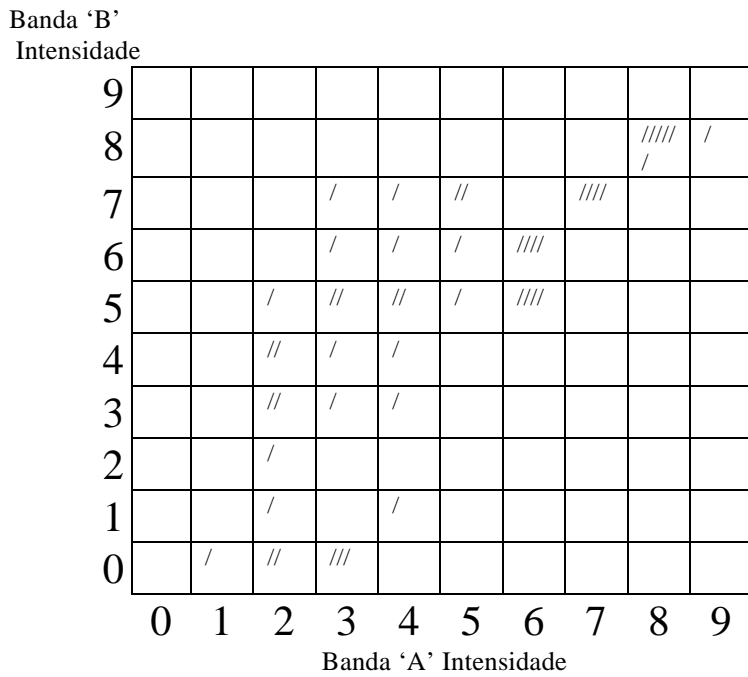


FIGURA 7
Histograma bidimensional

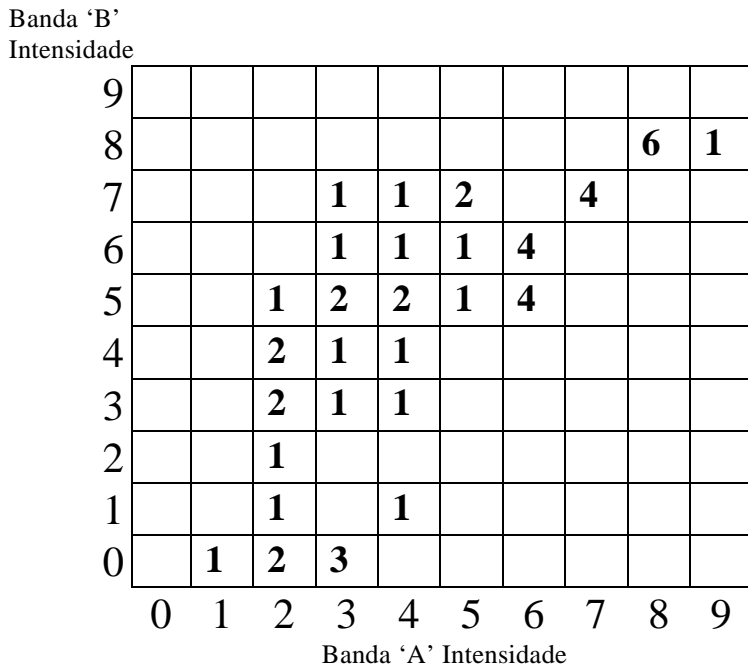


FIGURA 8

Mapa de controle no campo: 'Mata'

PIXELS

	1	2	3	4	5	6	7
L	1					F	
I	2				F		
N	3						
H	4	F					
A	5						
S	6						
7							

Níveis de intensidade da banda 'A': 5 , 4 , 2

Intervalo de intensidade da banda 'A':

Mínimo: 2

Máximo: 5

Níveis de intensidade da banda 'B': 7 , 5 , 3

Intervalo de intensidade da banda 'B':

Mínimo: 3

Máximo: 7

FIGURA 9A
Mapa forestal em Banda 'A'

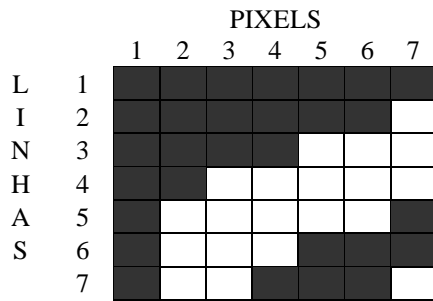


FIGURA 9B
Mapa florestal em Banda 'B'

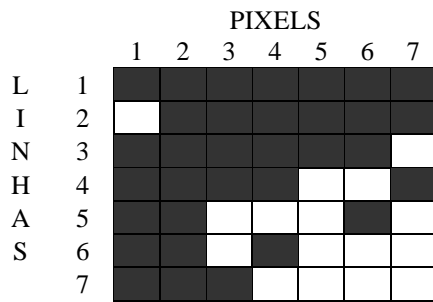


FIGURA 10A
 Parte do espaço espectral representando a 'mata'

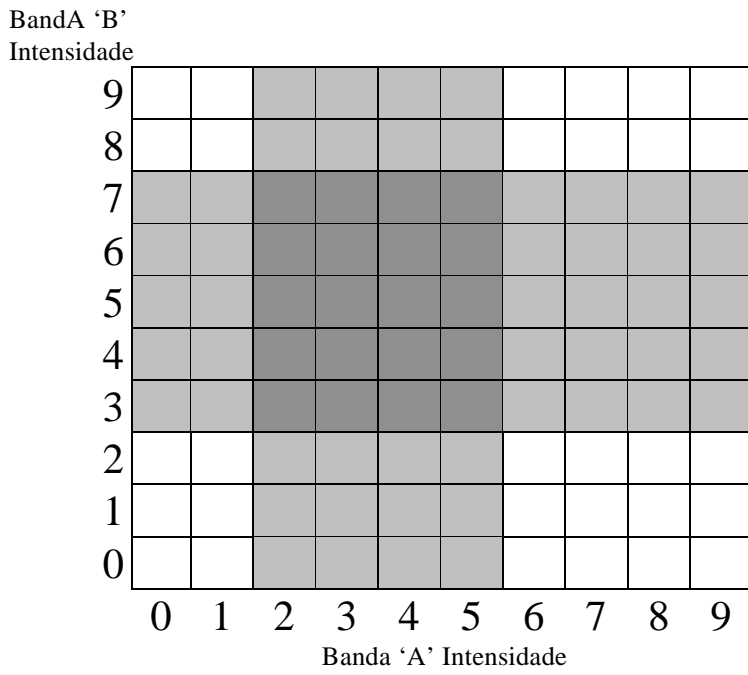


FIGURA 10B
 Representação da Mata em banda 'A' e 'B'

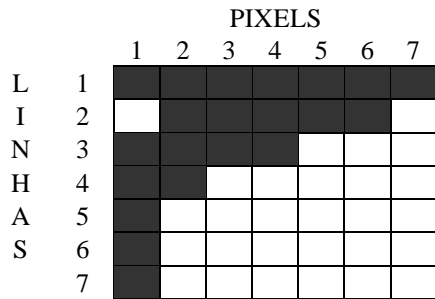


FIGURA 11A
 Mapa de controle no campo: tipo de mata

		PIXELS						
		1	2	3	4	5	6	7
L	1	D			D	D	D	D
I	2		C				D	
N	3	C	C		D			
H	4	C	C					
A	5	C						
S	6	C						
	7	C						

'C' = coníferas
 'D' = caducifólias

FIGURA 11B
 Identificação dos tipos de mata no espaço espectral

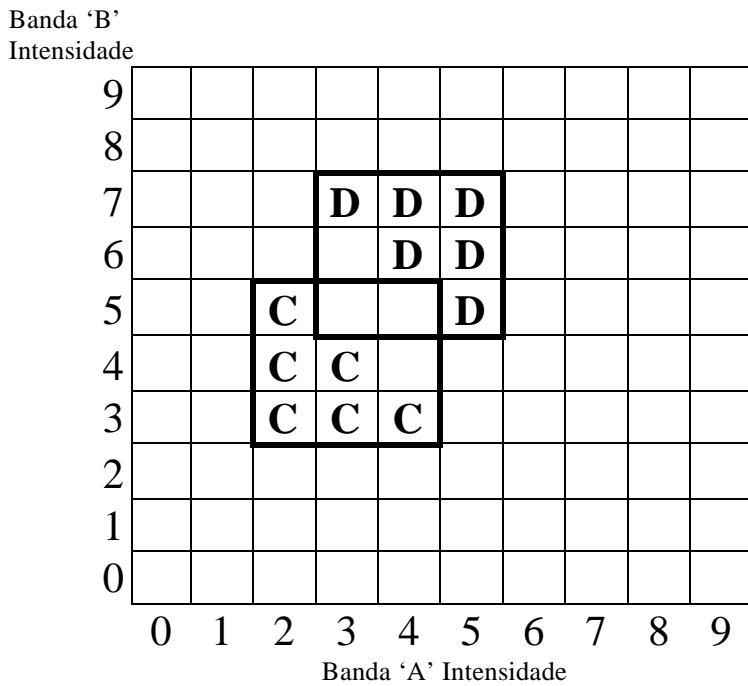


FIGURA 12A
Cena #2, Banda 'A'

		PIXELS						
		1	2	3	4	5	6	7
L	1	3	4	1	1	2	2	2
I	2	4	4	4	2	1	2	2
N	3	3	3	5	2	2	2	2
H	4	5	5	2	2	2	2	2
A	5	4	5	5	2	2	2	2
S	6	4	3	3	4	4	5	5
	7	5	5	3	4	4	5	4

FIGURA 12B
Cena #2, Banda 'B'

		PIXELS						
		1	2	3	4	5	6	7
L	1	7	7	0	0	0	3	3
I	2	7	7	6	0	0	3	4
N	3	4	4	7	1	1	3	4
H	4	7	7	4	4	3	4	4
A	5	6	7	7	4	5	5	5
S	6	7	5	5	5	7	7	6
	7	7	6	6	7	7	7	7

FIGURA 12C
Cena #2, Espaço espectral

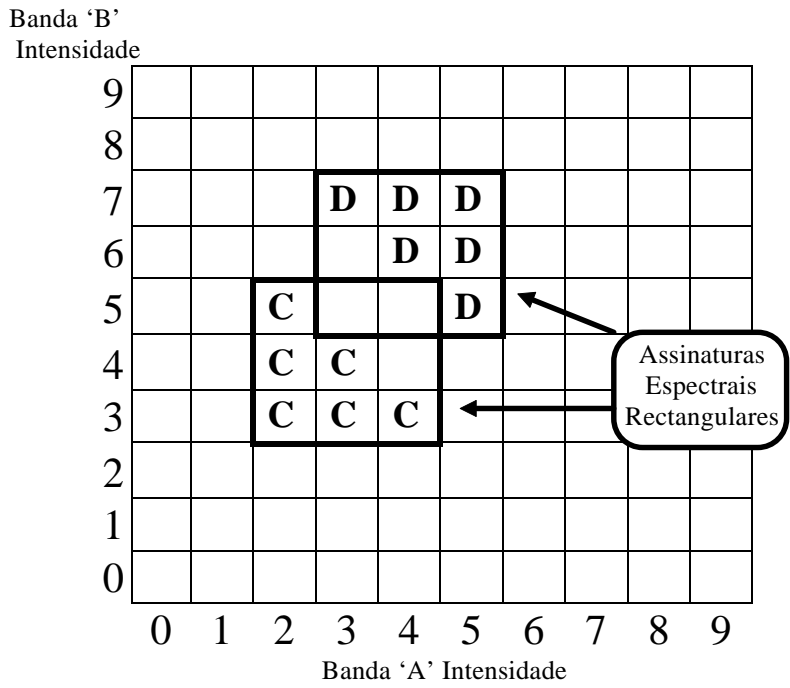


FIGURA 12D
Cena #2, Theme Map xxx

		PIXELS						
		1	2	3	4	5	6	7
L	1	D	D	W	W	W	C	C
I	2	D	D	D	W	W	C	C
N	3	C	C	D	W	W	C	C
H	4	D	D	C	C	C	C	C
A	5	D	D	D	C	C	C	C
S	6	D	M	M	M	D	D	D
	7	D	D	M	D	D	D	D

'C' = coníferas
'D' = caducifólias

FIGURA 13A
Cena #2, Banda 'B', Histograma unidimensional

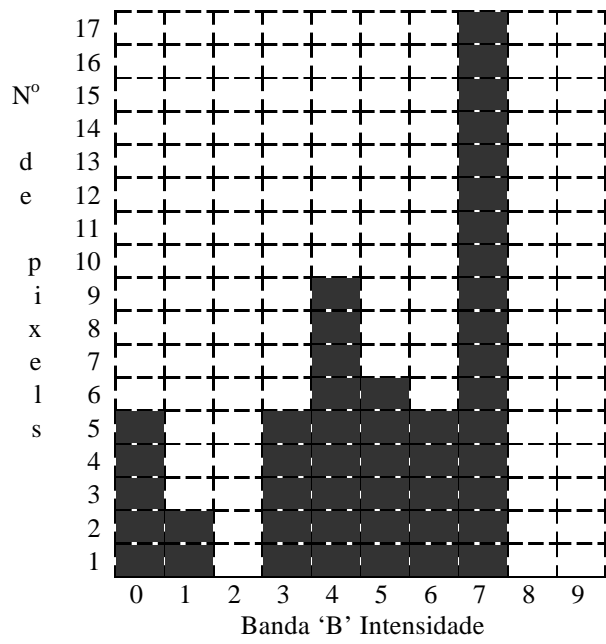


FIGURA 13B
Cena #2, Histograma bidimensional.

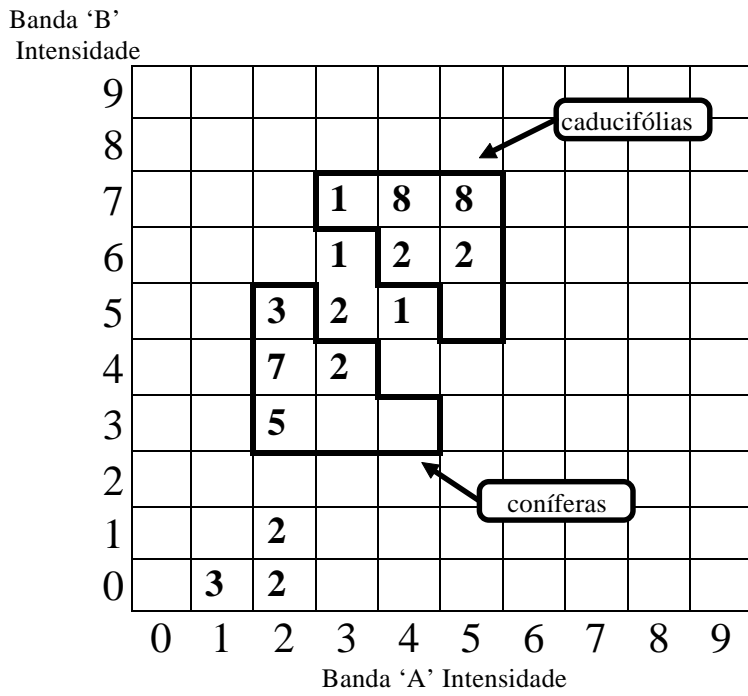


FIGURA 14A
Cena #2, Espaço espectral

Banda 'B'

Intensidade

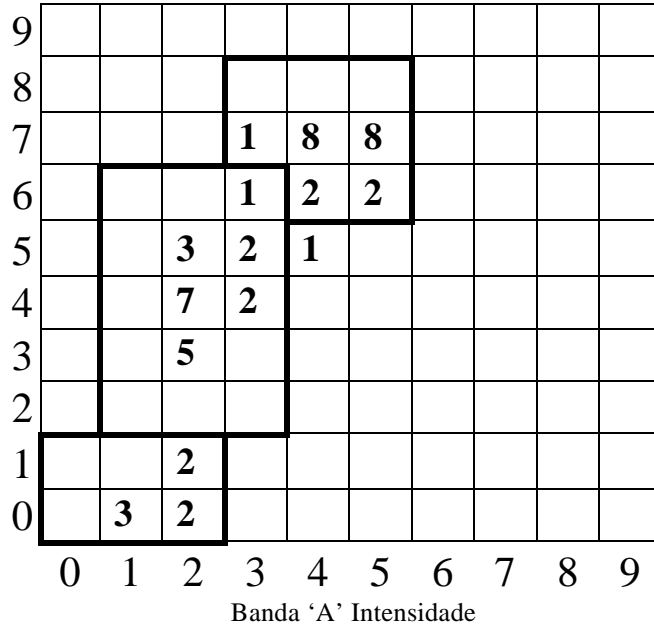


FIGURA 14B
Cena #2, Espaço espectral

Banda 'B'

Intensidade

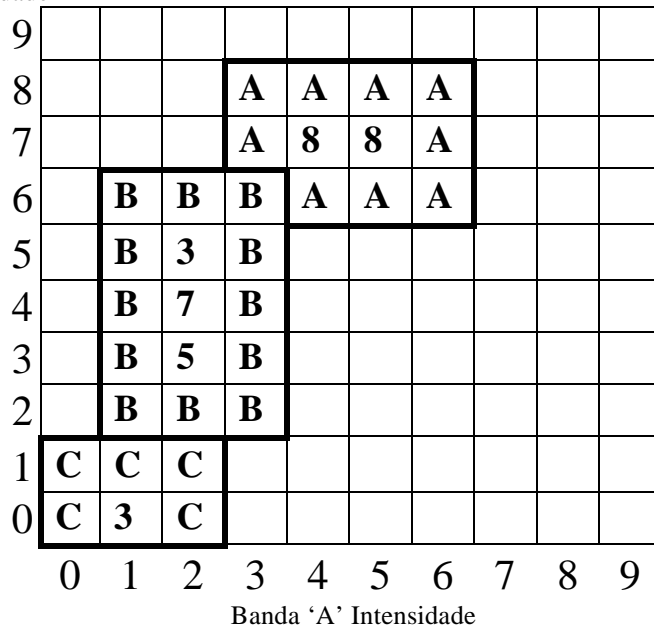


FIGURA 14C
Cena #2, Espaço espectral.

Banda 'B'
Intensidade

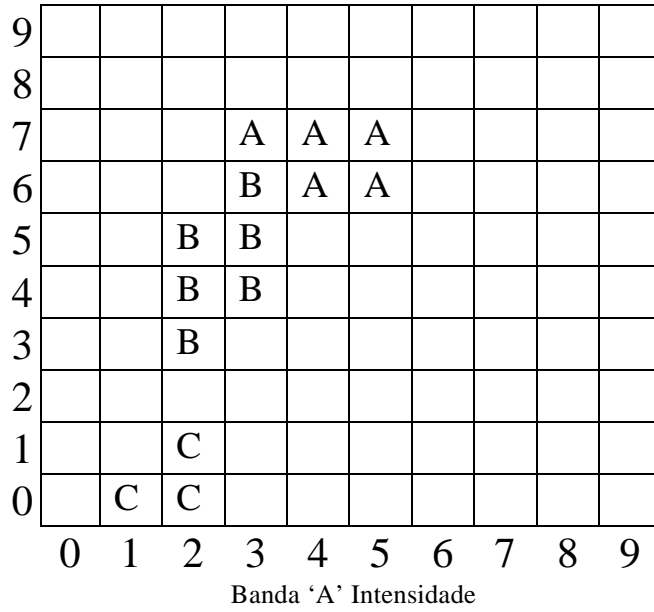


FIGURA 14D
Cena #2, Classificação nao supervisionada

