

**High resolution texture results.
Trabecular bone**

Andrzej Materka
Technical University of Lodz

COST B11 - Angers '2001 meeting

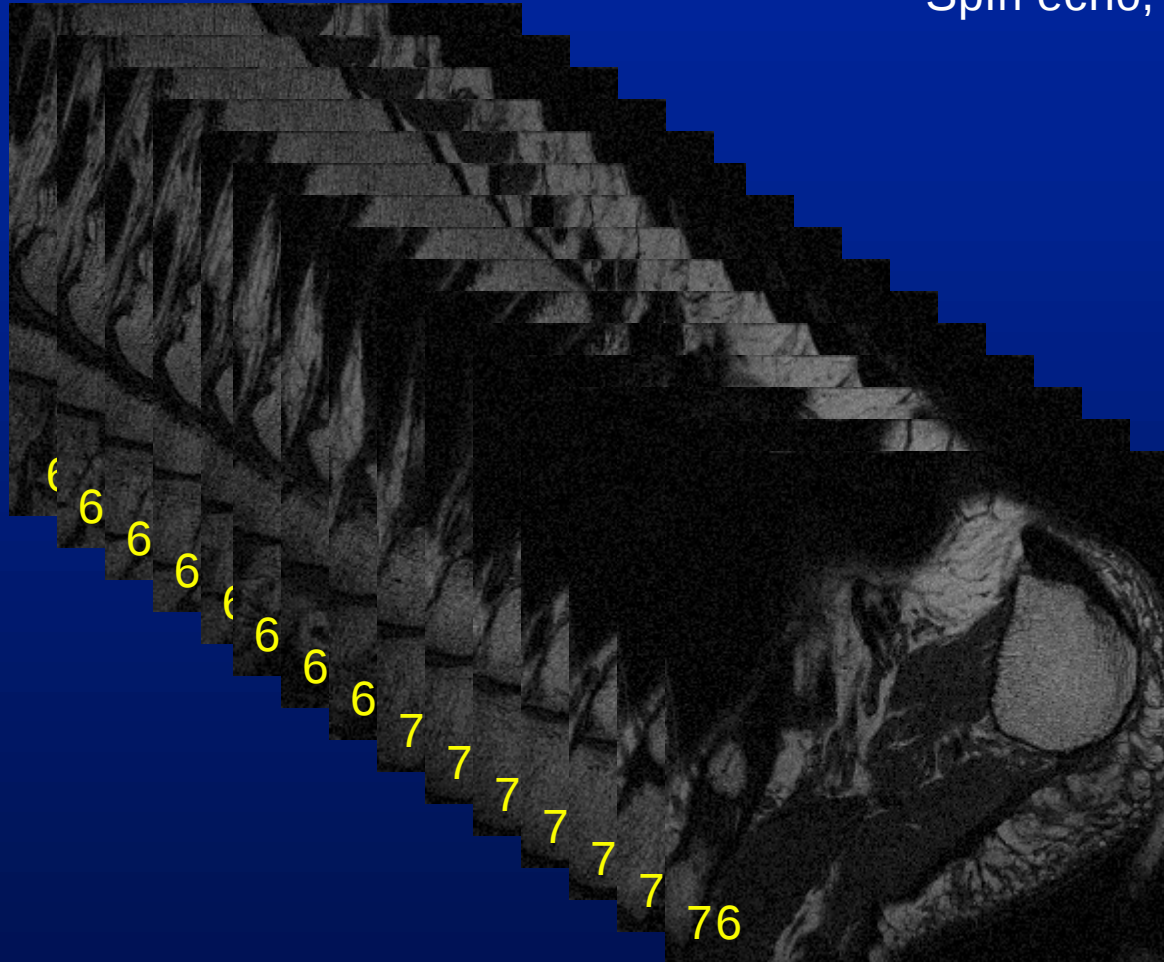
Material

- Spin echo 450/14/90°, 1.5 T
 - High resolution (0.2 mm x 0.2 mm x 1.0 mm)
 - Sagittal, transversal directions
-
- Flash 3D 22/11/30°, 1.5 T
 - High resolution (0.4 mm x 0.4 mm x 0.4 mm)
 - Sagittal direction (transversal reconstructed)

COST B11 - Angers '2001 meeting

Material

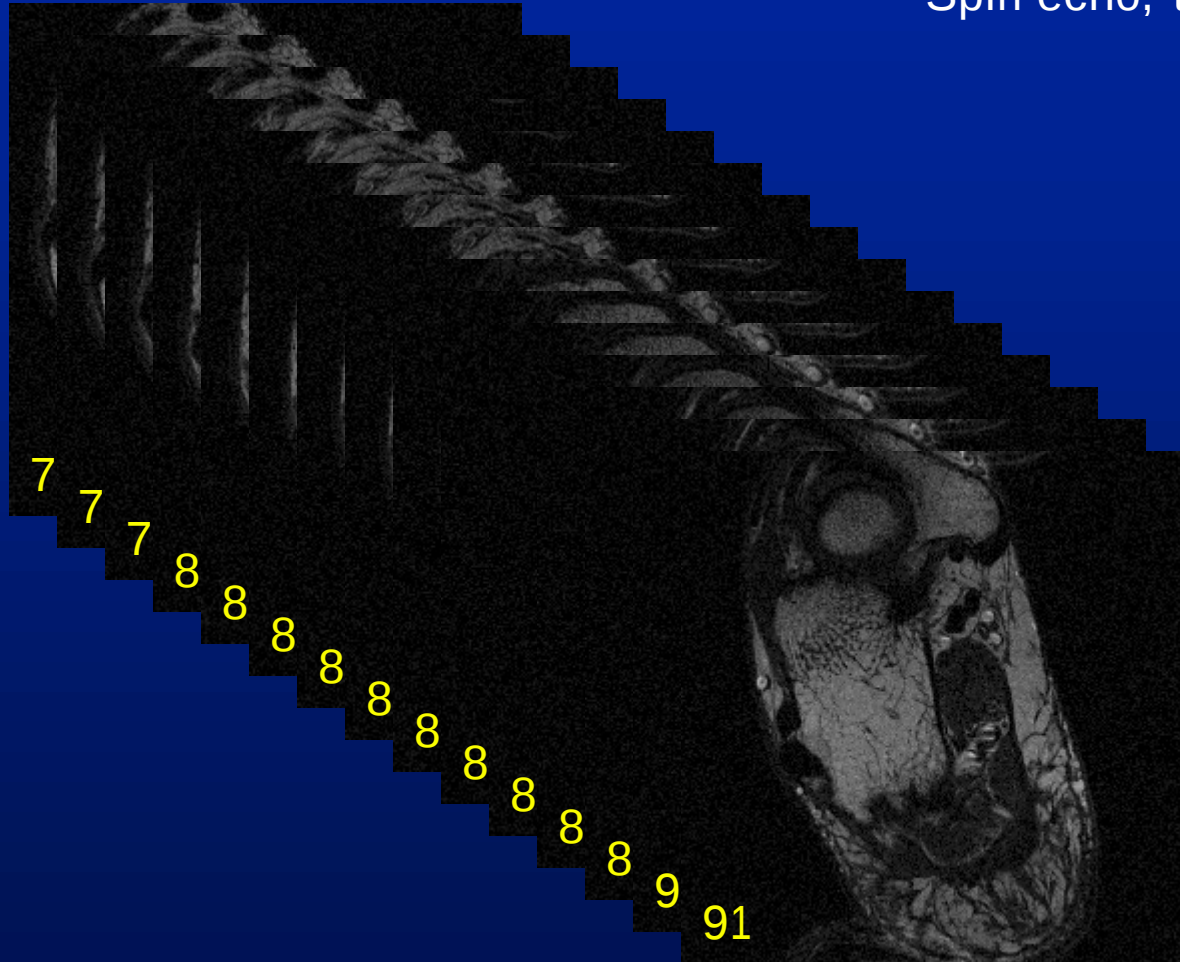
Spin echo, sagittal direction



COST B11 - Angers '2001 meeting

Material

Spin echo, transversal direction



COST B11 - Angers '2001 meeting

Material

Flash 3D
(0.4 x 0.4 x 0.4 mm)



Spin echo (0.2 mm x 0.2 mm x 1 mm)



Interpolation



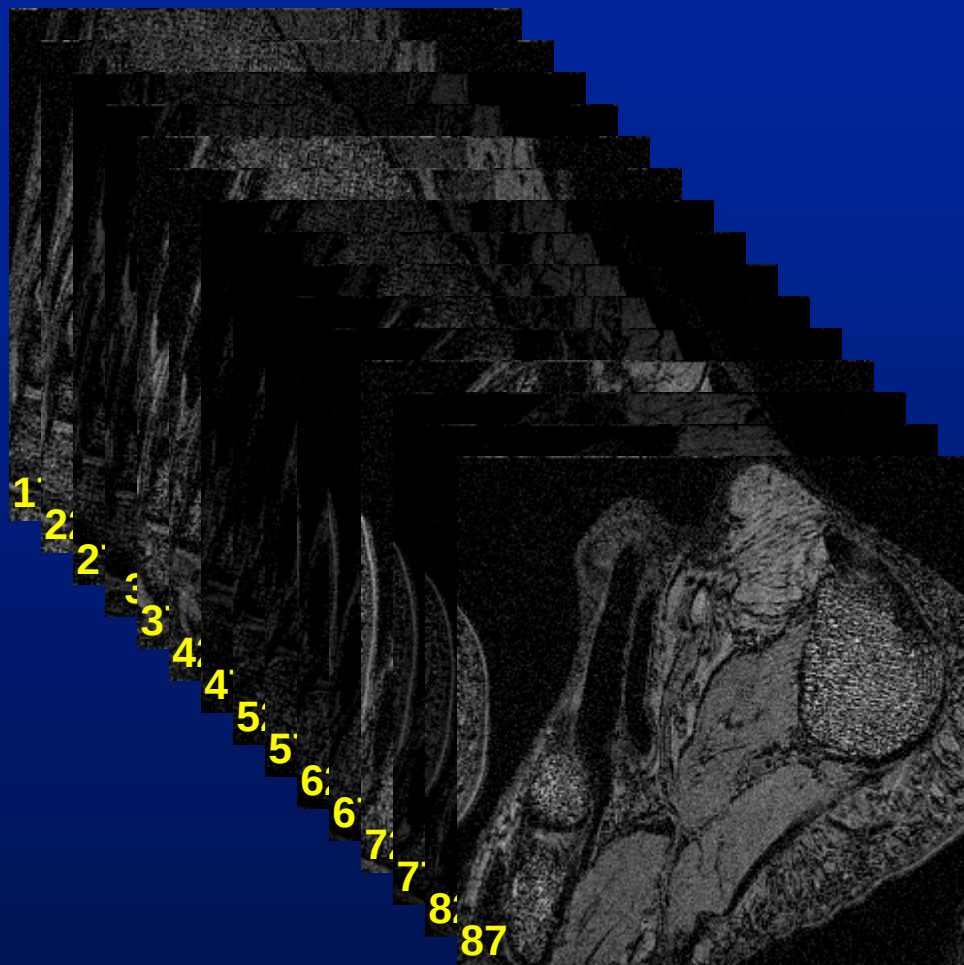
Downsampling



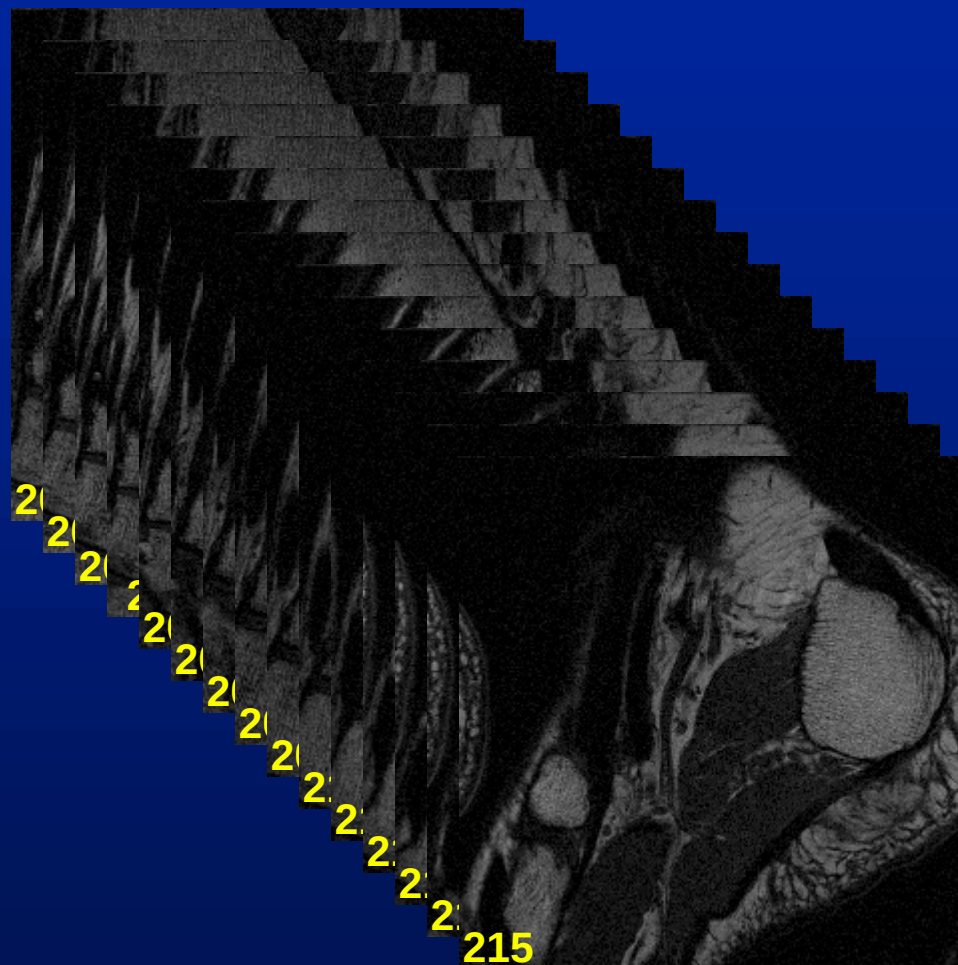
COST B11 - Angers '2001 meeting

Material

Flash 3D (0.4 x 0.4 x 0.4 mm)



Spin echo (bilinear interpolation)

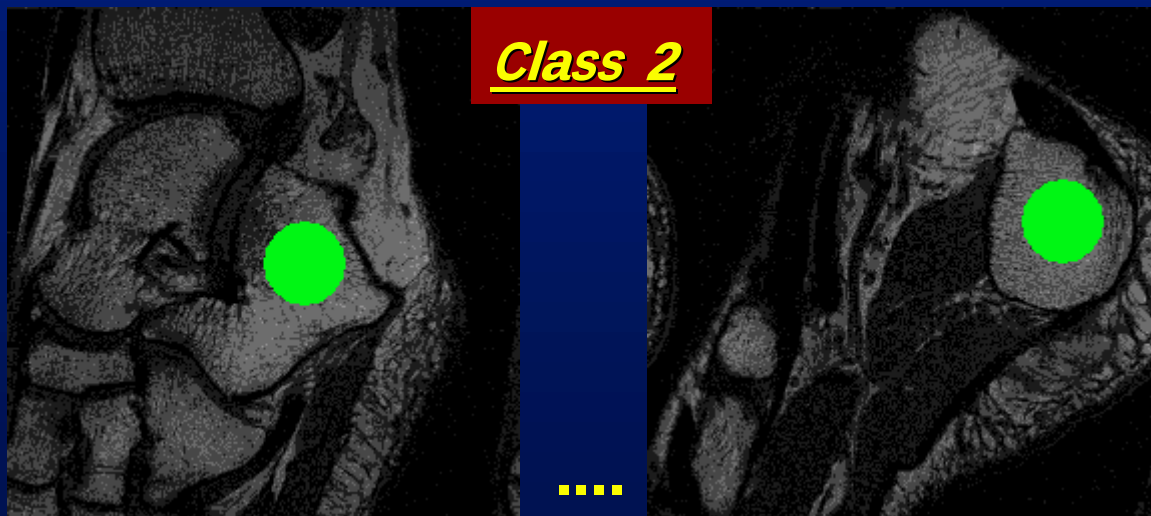


COST B11 - Angers '2001 meeting

Class 1



Class 2



MaZda options

Mazda - options

Features | Maps

☒ RLM features	☒ COM features	☒ Gradient features
RLM bits/pixel	COM bits/pixel	Distances
☐ 8	☐ 8	☒ 1
☐ 7	☐ 7	☒ 2
☒ 6	☒ 6	☒ 3
☐ 5	☐ 5	☒ 4
☐ 4	☐ 4	☒ 5
		Gradient bits/pixel
		☐ 12 ☐ 7
		☐ 11 ☒ 6
		☐ 10 ☐ 5
		☐ 9 ☐ 4
		☐ 8

Normalisation

☐ Default ☒ +/- 3 sigma ☐ 1% - 99%

☐ Histogram features ☐ Save histogram data

☒ AR model ☐ Draw histogram

OK Cancel

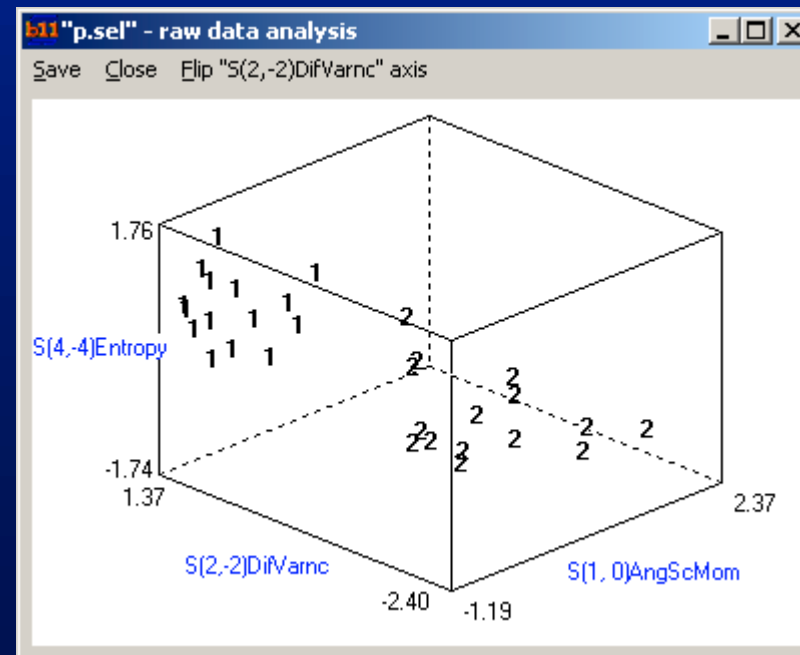
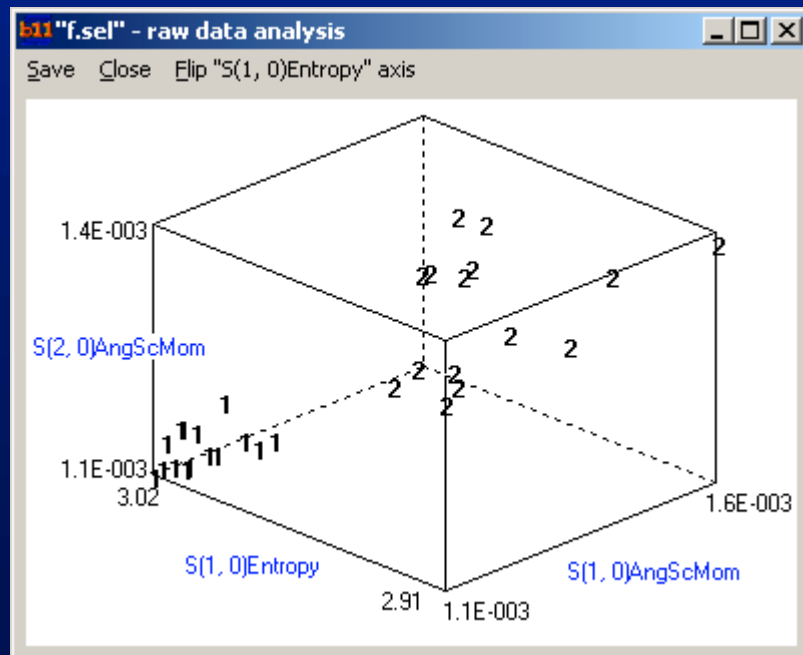
COST B11 - Angers '2001 meeting

F coeff

Fisher coefficient		
Feature name	F	
S(1, 0) AngScMom	19.99	
S(1, 0) Entropy	17.24	
S(2, 0) AngScMom	11.71	
S(2, 0) Entropy	11.21	
S(5, 5) Entropy	8.42	
S(4, -4) Entropy	8.03	
S(5, 5) AngScMom	8.00	
S(0, 1) Entropy	7.35	
S(4, 4) Entropy	7.16	
S(4, -4) AngScMom	7.13	

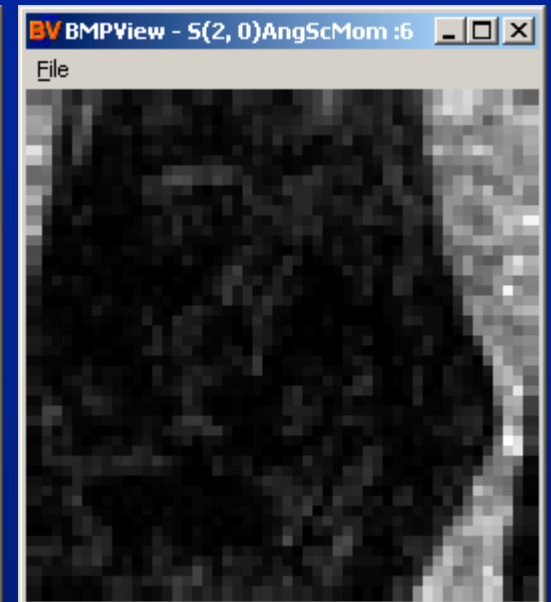
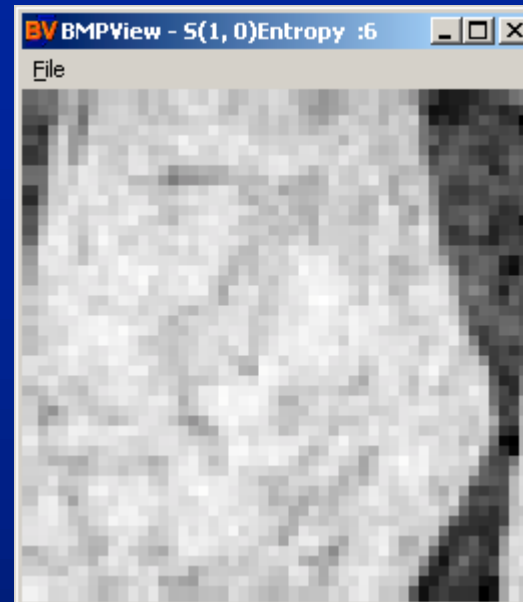
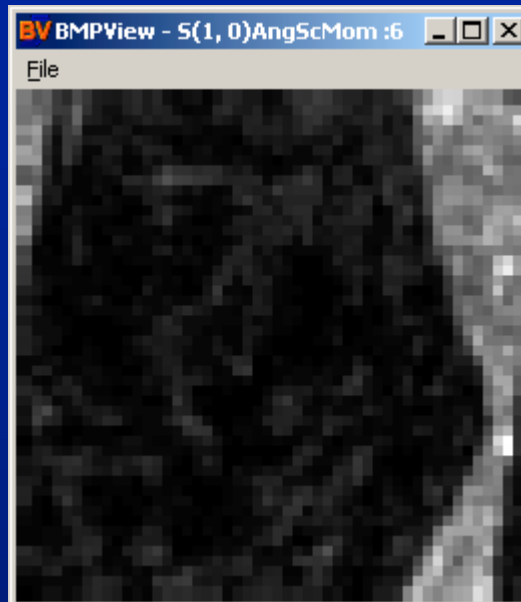
POE

POE+ACC		
Feature name	POE+ACC	
S(1, 0) AngScMom	0.00	
S(2, -2) DifVarnc	0.15	
S(4, -4) Entropy	0.20	
S(1, 0) Entropy	0.19	
S(5, -5) DifEntrp	0.23	
S(4, -4) AngScMom	0.23	
S(2, 2) SumOfSqs	0.25	
S(2, 0) AngScMom	0.24	
S(0, 1) SumAverg	0.25	
S(0, 2) SumEntrp	0.26	

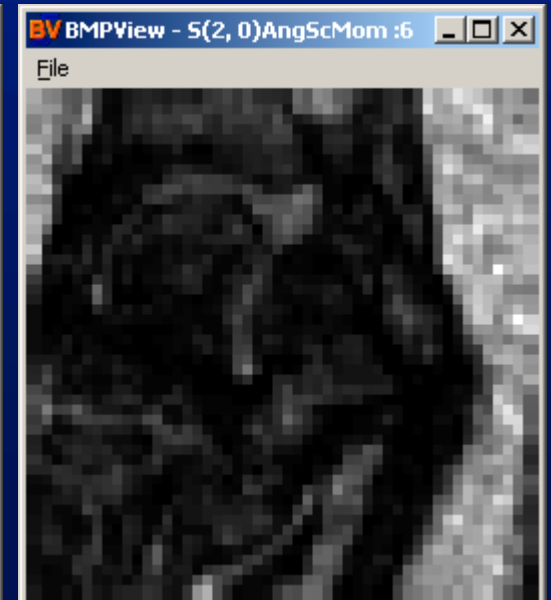
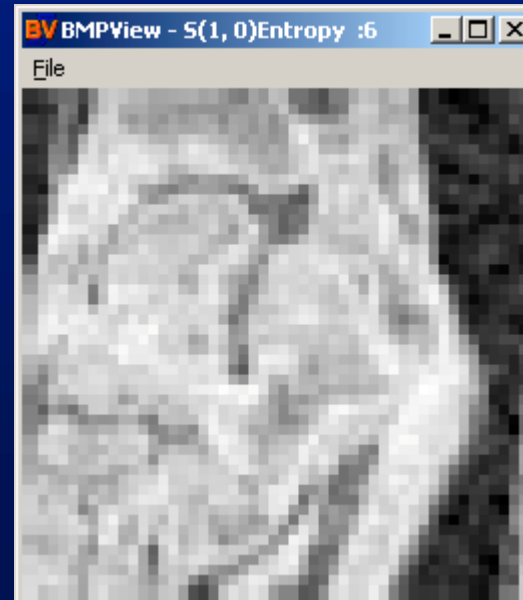
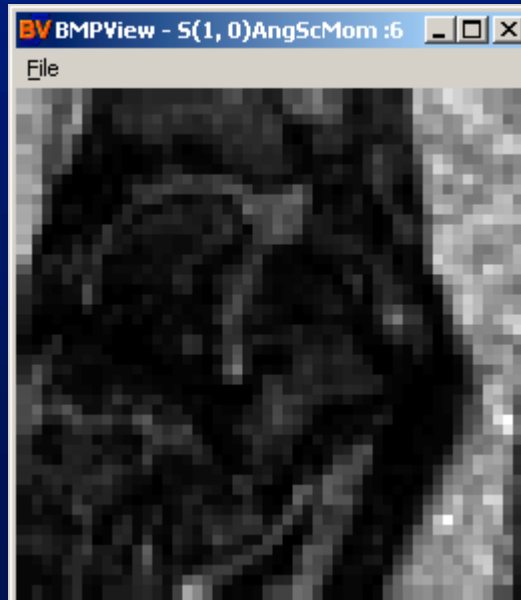


COST B11 - Angers '2001 meeting

Flash 3D 201

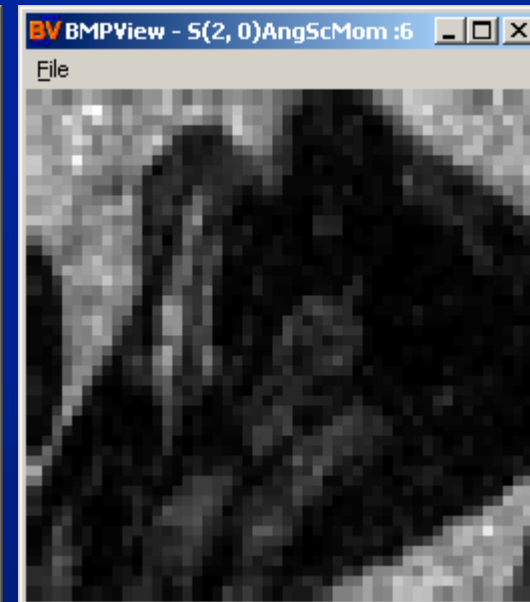
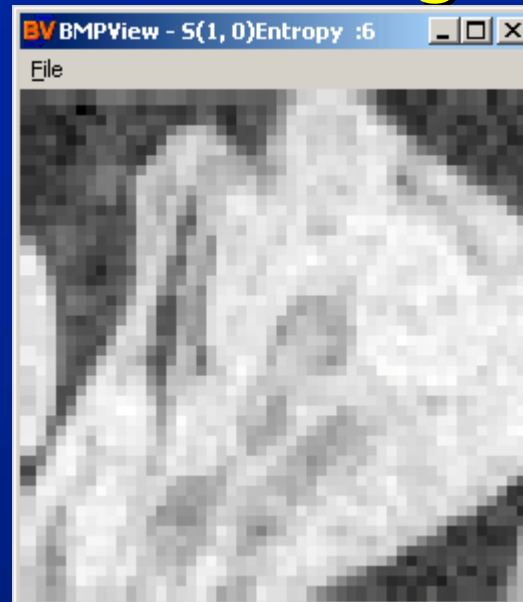
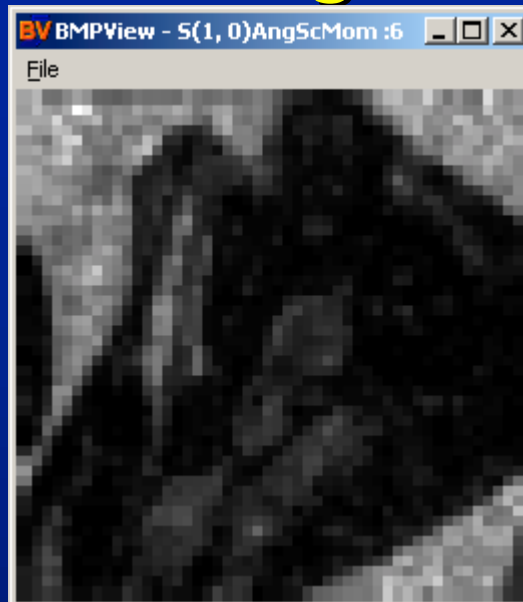


Spin echo 017

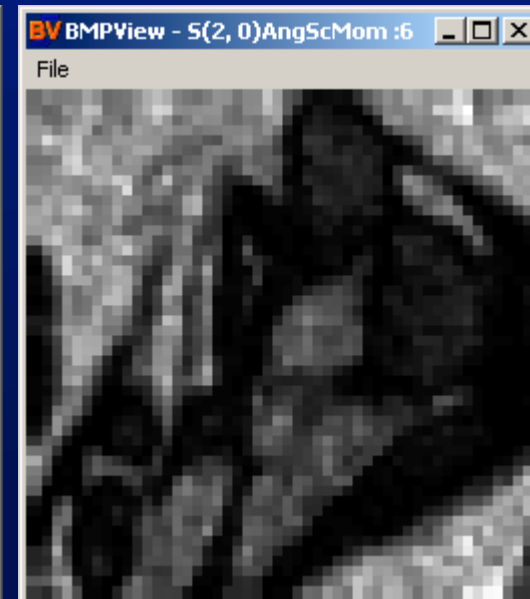
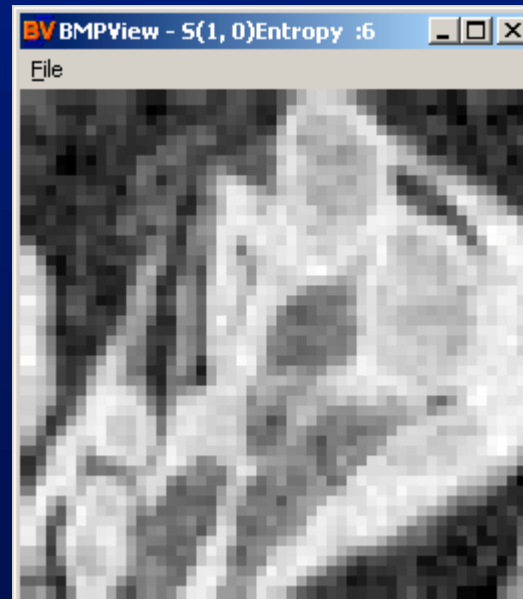


COST B11 - Angers '2001 meeting

Flash 3D 215



Spin echo 087



COST B11 - Angers '2001 meeting

Summary

- „Spin echo” and „Flash 3D” produce different texture.
- What causes this difference - resolution only?
- Images for larger number of patients? Different stages of osteoporosis?