

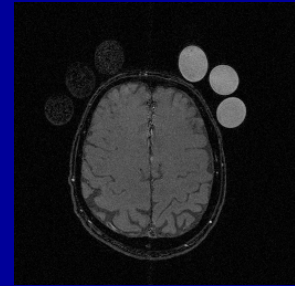
Heidelberg, Germany
19 – 21 October, 2000

Results of measurements:

♦ Resolution

M Strzelecki / A Materka (PL)

Images uploaded on
September 2000



Four image series:

'3' - 24 images
'4' - 27 images
'5' - 27 images
'6' - 26 images

Image analysis steps



MaZda

259 texture parameters



Convert

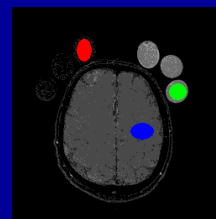
Parameter selection:
Fisher, POE, MDA



b11

PCA, LDA, NDA analysis,
feature classification: kNN, ANN

It was not possible to
separate all 6 phantoms

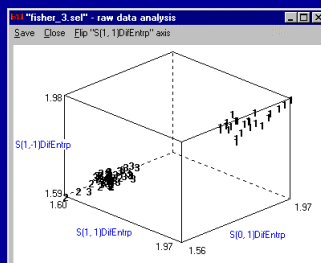


Thus we chose two
phantoms (well separated)
and brain tissue

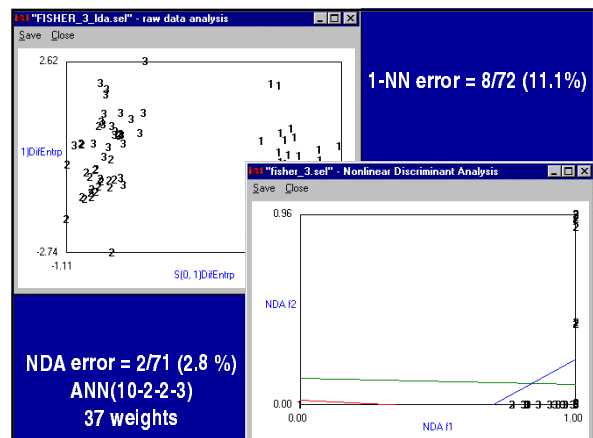
series 3

Feature name	F
S(2, 0) DifEntp	65.41
S(0, 2) DifEntp	53.11
S(1, 1) DifEntp	50.43
S(4, 0) DifEntp	49.43
S(1, -1) DifEntp	48.37
S(3, 0) DifEntp	46.88
S(5, 0) DifEntp	43.82
S(0, 1) DifEntp	43.23
S(2, 2) DifEntp	42.32
S(3, 3) DifEntp	37.89

feature selection: Fisher



1-NN error = 11/72 (15.3%)

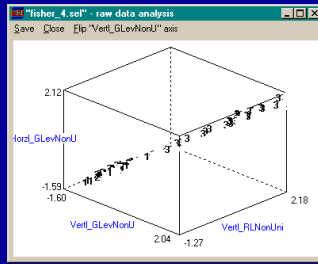


NDA error = 2/71 (2.8 %)
ANN(10-2-2-3)
37 weights

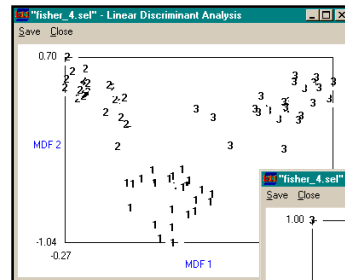
series 4

Feature name	F
45dgr_GlevNonU	20.65
135dr_GlevNonU	19.70
Vert1_GlevNonU	19.60
Horiz1_GlevNonU	19.35
S(1, 1)AngScMom	18.53
135dr_RLNonUni	18.29
Vert1_RLNonUni	18.13
S(1, 1)Entrop	17.61
45dgr_RLNonUni	16.66
S(0, 4)AngScMom	16.65

feature selection: Fisher

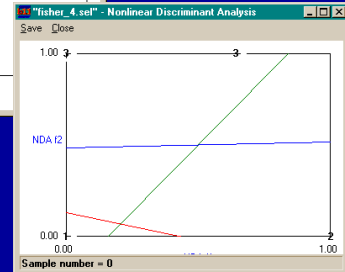


1-NN error = 0/81 (0%)



1-NN error = 0/81 (0%)

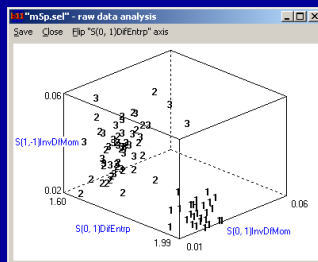
NDA error = 0/81 (0 %)
ANN(10-2-2-3)
37 weights



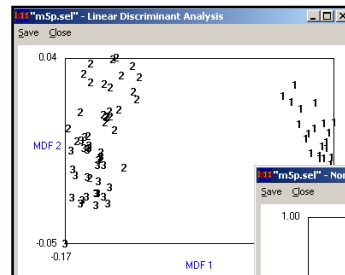
series 5

Feature name	PDE+ACC
S(5, 0)Correlat	0.15
S(1, -1)DisfEntp	0.08
S(1, -1)InvDfMom	0.13
S(0, 1)InvDfMom	0.14
S(1, -1)SumAverg	0.15
S(0, 5)Correlat	0.17
S(0, 1)DisfEntp	0.17
S(5, 0)DisfVarnu	0.16
S(5, -5)InvDfMom	0.18
S(0, 5)InvDfMom	0.18

feature selection: POE

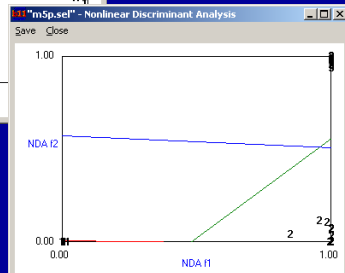


1-NN error = 13/81 (16.1%)



1-NN error = 7/81 (8.6%)

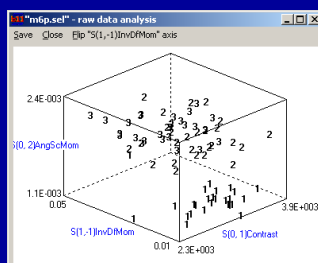
NDA error = 0/81 (0 %)
ANN(10-2-2-3)
37 weights



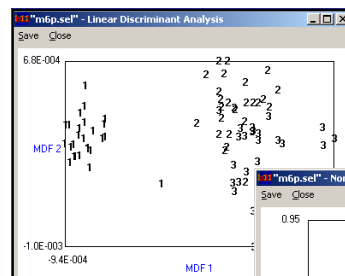
series 6

Feature name	PDE+ACC
S(0, 1)Contrast	0.18
S(0, 2)AngScMom	0.14
S(3, -3)InvDfMom	0.17
S(2, 2)InvDfMom	0.17
S(0, 5)SumVarnu	0.18
S(4, 0)InvDfMom	0.18
S(1, -1)InvDfMom	0.19
S(4, 4)InvDfMom	0.19
S(3, 0)AngScMom	0.19
S(5, -5)InvDfMom	0.19

feature selection: POE

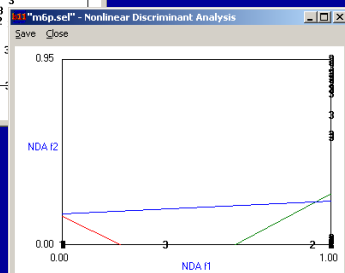


1-NN error = 13/78 (16.8%)



1-NN error = 25/78 (30.1%)

NDA error = 1/78 (1.3 %)
ANN(10-2-2-3)
37 weights



Summary

Series	min. classification error
3	2/71 (2.8%)
4	0/81 (0 %)
5	0/81 (0 %)
6	1/78 (1.3%)