

NAME

acecancor – non-linear canonical correlations analysis via ACE

SYNOPSIS

acecancor *im2(Y)* [**-ns** *ns*] [**-sup** [**-span** *span*] | **-bw** *bw*] [**-tol** *tol*] < *im1(X)*

DESCRIPTION

acecancor finds smooth non-linear transformations of one set of images and smooth non-linear transformations of another set of images such that the correlation between the sum of the one set of transformed images and the sum of the other set of transformed images is maximized. ACE output corresponding to *im2(Y)* is normalised to unit variance. Info on convergence etc. is written to *stderr* and to file *tfunc.dat*.

OPTIONS

-ns *ns* *ns* (int) is number of (orthogonal) solutions wanted

-sup use Friedman-Stuetzle supersmoother in computing projections (not default)

-span *span*

span (float) is supersmoother span parameter; 0 means local crossvalidation choice of bandwidth for smoother (default); 1.0 means use linear smooths; any value in the range 0-1 means use this fraction of the data for computing local linear fit in each point (see ref.)

-bw *bw*

bw (int) is bandwidth for simple box car smoother; *bw* is set to the number of neighbours included in calculation; feasible values: 0-255 (default 0)

-tol *tol* *tol* (double) is convergence tolerance for squared correlation (default 0.001)

EXAMPLE

Compute 3 first solutions using a box car smoother with bandwidth 5

```
acecancor im2.hips -ns 3 -bw 5 < im1.hips
```

The same but using the supersmoother:

```
acecancor im2.hips -ns 3 -sup < im1.hips
```

REFERENCES

Breiman, L. and Friedman, J.H. (1985). Estimating Optimal Transformations for Multiple Regression and Correlation, *Journal of the American Statistical Association (JASA)*, **80**, 580-619.

Windfeld, K. (1992). *Application of Computer Intensive Data Analysis Methods to the Analysis of Digital Images and Spatial Data*. Ph.D. Thesis 62, IMM, Department of Mathematical Modelling, Technical University of Denmark.

SEE ALSO

maf(1), cancorr(1)

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