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NAME

spam – spectral angle mapper

SYNOPSIS

spam **-M** *maskfile* [*maskvalue*] | **-r** *nf ref(1) ref(2) ... ref(nf)* [**-a**] [**-d**] [**-w**] [**-v**]

DESCRIPTION

spam calculates the angle between any pixel vector and a reference spectrum. This is an intensity independent measure. If **-a** is specified the dot product rather than the angle is calculated. If **-d** is specified the length of the vector difference is output as frame 0. **-r** or **-M** defining the reference spectrum (or vector) is not optional. If **-w** is specified the reference spectrum is written to *stderr*.

Input file must be band-interleaved-by-line (BIL, see *bil(1)*). Input format must be byte, short, unsigned short, int or float. Output format is float. If more than one frame is written, output is BIL.

OPTIONS

- M** *maskfile* [*maskvalue*]
use mean of pixels where *maskfile* (in byte format) has value *maskvalue* (defaults to 0) as reference spectrum
- r** *nf ref(1) ref(2) ...*
specification of reference spectrum where *nf* is the number of input bands (frames)
- a** output dot product instead of angle (the angle is the inverse cosine of the dot product)
- d** output length of vector difference as frame 0
- w** output reference spectrum to *stderr*.
- v** verbose

SEE ALSO

specang(1), *bil(1)*, *discrim(1)*, *disc(1)*, *maf(1)*

REFERENCES

- J.W. Boardman (1992): *Spectral Angle Mapping*, to be published.
- Center for the Study of Earth from Space (CSES), Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado, Boulder (1992): *SIPS User's Guide, Spectral Image Processing System Version 1.2*.

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