NAME
histobe − histogram match to beta distribution

SYNOPSIS
histobe [−z] [−a alpha] [−b beta] [−g numgrey] [−I]
[−e [nr nc [sr sc]]] [−M mask_file [mask_value]] [−l lut_file]

DESCRIPTION
histobe matches the histograms of a HIPS byte sequence of frames to that of a Beta distribution. The Beta distribution is very versatile and a good approximation to many distributions defined on a closed interval. The parameters alpha and beta (both >0.0 and <20.0, default to 4.0) are given by options −a and −b. alpha>beta gives a distribution skewed towards higher values, alpha<beta gives a distribution skewed towards lower values. alpha=beta gives a distribution symmetric around the mean; alpha=beta=1 gives histogram equalization; alpha=beta=4 gives a good approximation to a Gaussian. alpha=beta=2 gives a good trade-off between the preservation of detail in the tails offered by a Gaussian stretch and the powerful visual impression of the histogram equalization. The parameter numgrey the number of output grey levels (<=256, defaults to 256) is given by option −g.

OPTIONS
−z zero valued pixels are not included in the stretches and the remaining pixels are stretched from 1 to numgrey−1.
−a alpha in the Beta distribution (defaults to 4.0).
−b beta in the Beta distribution (defaults to 4.0).
−g numgrey is the number of grey levels (defaults to 256).
−I stretch intensity rather than individual frames (3-frame sequence only).
−e [nr nc [sr sc]] extract rectangular area for histogram match only; nr, nc, sr and sc are number of rows and columns, and starting row and column respectively (default is a centered rectangle half the size of the original image).
−M mask_file [mask_value] histogram match is performed only where mask_file (a byte HIPS image) has the value mask_value (defaults to all values greater than 0).
−l lut_file look-up table is written to lut_file. Look-up tables for multi-frame images are written to lut_file one after the other. (As of now xshow only reads the first of these consecutive look-up tables.)

EXAMPLE
When stretching an intensity-hue-saturation (IHS) image one often wants to stretch I to something that looks like a Gaussian distribution, H to a flat distribution (equalization) and S to a distribution that grows linearly from 0. This can be achieved in the following fashion:

histobe −a 4 −b 4 < I > Is
histobe −a 1 −b 1 < H > Hs
histobe −a 2 −b 1 < S > Ss

SEE ALSO
histo(1), disphist(1), entropy(1), framevar(1), histoeq(1), fhist(1)

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