

# 1 Program 3dpc

Principal Component Analysis of 3D Datasets

## 1.1 Usage

**3dpc** [options] dataset dataset ...

Each dataset may have a sub-brick selector list. Otherwise, all sub-bricks from a dataset will be used.

## 1.2 Options

**-dmean** = remove the mean from each input brick (across space)

**-vmean** = remove the mean from each input voxel (across bricks)

[N.B.: -dmean and -vmean are mutually exclusive]

[default: don't remove either mean]

**-normalize** = L2 normalize each input brick (after mean subtraction)

[default: don't normalize]

**-pcsave sss** = 'sss' is the number of components to save in the output; it can't be more than the number of input bricks

[default = all of them = number of input bricks]

**-prefix pname** = Name for output dataset (will be a bucket type); also, the eigen-timeseries will be in 'pname'.1D (all of them) and in 'pnameNN.1D' for eigenvalue #NN individually (NN=00 .. 'sss'-1, corresponding to the brick index in the output dataset)

[default value of pname = 'pc']

**-1ddum ddd** = Add 'ddd' dummy lines to the top of each \*.1D file. These lines will have the value 999999, and can be used to align the files appropriately.

[default value of ddd = 0]

**-verbose** = Print progress reports during the computations

**-float** = Save eigen-bricks as floats

[default = shorts, scaled so that |max|=10000]