phistogram

keys:	[plist]	*<number>*	source particle parameter list
	[to]	*<number>*	output histogram
	if	*<expression>*	logical expression specifying which particles to include
	unless	*<expression>*	logical expression specifying which particles to exclude
	channels	*<number>*	number of histogram channels
	height	*<number>*	histogram height in framestore pixels
	times	*<number>*	display magnification factor
	aspect	*<number>*	if **type/log**, text aspect ratio
	width	*<number>*	if **type/log**, number of characters per line
options:	xref, yref, id, parents, holes, background, contact, xmin, xmax, ymin, ymax, hferet, vferet, aferet, bferet, hproj, vproj, perimeter, area, xcen, ycen, mmin, mmax, angle, circularity		produce histogram for specified particle parameter
	preset		set histogram limits from *min*, *max*
	repeating		repeat histogram counts when magnifying, instead of interpolating
	letter		mark top of display partition with picture number and title
	border		mark picture border
	type/log		output histogram in character form to console or log output stream

phistogram operates on the particle parameter list (*ppl*) produced by the **analyse** command. **phistogram** displays a histogram of the parameters measured by **analyse.** Refer to *Appendix D, Particle Parameters* for a list of the recorded parameters and the names that you should use to refer to them in **if/unless** expressions.

Examples

```
analyse...; phistogram circularity
```

This command displays a histogram of the circularity value of all particles.

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```
phistogram area to 51 if perimeter > 200
```

This command creates a *Histogram* picture 51 containing a histogram of the areas of particles with perimeters greater than 200.

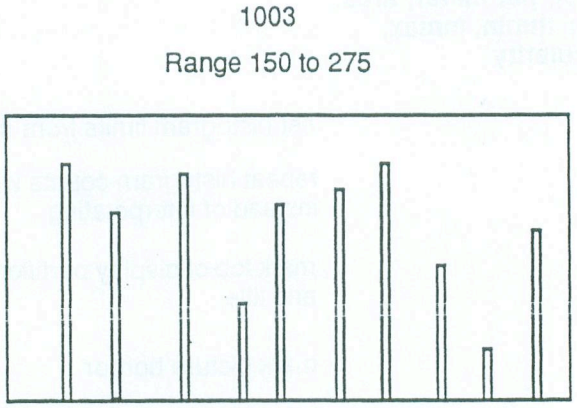
```
phistogram 46 area to dis:3
```

This command draws a histogram in *dis:3* showing the areas of all particles in *ppl* 46.

Description

analyse records 25 particles for each particle and stores these details in a particle parameter list (*ppl*). **phistogram** allows you to display a histogram of a named parameter, for example, **xmin, xmax**. You can use the keys **If/unless** to select only particles that meet particular conditions. The diagram below illustrates a histogram produced by the following sequence of commands:

```
analyse 1 to 2 ge h le h2 area 10; phist 2 to 3 area; display 3
```



By default, **phistogram** displays a histogram in graphical form on the display. You can also store a histogram in a class *Histogram* picture using the **to** key. Use the keys **channel, height** and **times** to specify the number of histogram channels and the height and magnification of a graphical display.

Use the **type/log** option to output the histogram in character form to the console or to the log output stream. Use the **aspect** and **width** keys to specify the aspect ratio and number of characters per line for character form displays.

You can turn off the default lettering and border marking using the options **noletter** and **noborder**.

Notes

see also: **analyse**

phistogram

Defaults and Ranges

keys/options	defaults	range
[plist]	*ppl* held in the variable *pplist*	valid picture number
[to]	current display picture, held in the variable *display*, histogram shown in graphical form	valid picture number
if	true	valid Semper expression
unless	false	valid Semper expression
channels	*max,min* if in range 20,256; otherwise 256	positive integer
height	lesser of half histogram width and half partition height	positive integer
times	1	positive integer
aspect	default given by the **page** command	positive real number
width	default given by the **page** command	positive integer
xref,yref,id,parents, holes,bacground, contact,xmin,xmax, ymin,ymax,hferet, uferet,uferet,aferet, bferet,hproj,uproj, perimeter,area,xcen, ycen,mmin,mmax, angle,cirularity	*none*	
preset	lowest and highest selected parameter values	
repeating	interpolate between histogram counts when magnifying	
border	bordering on	
letter	lettering on	
type/log	histogram shown in graphical form on display	