Brief Article

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January 11, 2006

1. We see the overflow and underflow values are included in the lowest and highest bins. There is no title, key, etc due to the fact that we used the minimum interface.

2. Go to gauss/av1.

   gnuplot plot.gp

   This will show title, key , x,y labels.

3. However, we cannot control with this usage. To be able to control the display, we must load plot.gp within gnuplot.

4. gnuplot

```
gnuplot> load "plot.gp"\\
gnuplot> set xr[-2:6]
gnuplot> set log y
gnuplot> rep
gnuplot> a=1;s=1;m=2
gnuplot> f(x) = a/sqrt(2*pi)/s *exp(-((x-m)/s)**2/2)
gnuplot> ! ls
1.dat   2.dat   3.dat   4.dat   5.dat   plot.gp var.gp
gnuplot> fit f(x) "5.dat" via a,s
gnuplot> set yr[1.e-5:10]
gnuplot> rep f(x)  lw 3
```

5. More details will be controlled by editing plot.gp. For examle, we change the last part as
   `call "var.gp" "$1" "$2" "w p"`

```
gnuplot> load "plot.gp"
gnuplot> rep f(x)  lw 3
```

   When plot.gp is changed, it is not reflected by rep; we must load it again.

0.1 Summary

- ha: histogram area. define as include "Z90histi.h" and type(histogrami) ha (i=1,2,3).
- min: value of lowest bin. (always not in log)
- bin: bin or highest value of bin.
- nbin: number of bins.
- bitptn: 5bit pattern. 1-log. 2-min is middle of lowest bin. 3-inc. unf. 4-inc. ovf. 5-bin is max.

Table 1: Calling sequence

function	1D	2D	3D
initialize	kwhisti(ha, min, bin, nbin, bitptn)	kwhisti2(ha, min, bin, nbin, bitptn, min, bin, nbin, bitptn)	kwhisti3(ha, min, bin, nbin, bitptn, min, bin, nbin, bitptn, min, bin, nbin, bitptn)
clear	kwhistc(ha)	kwhistc2(ha)	kwhistc3(ha)
count	kwhist(ha, x, w)	kwhist2(ha, x, y, w)	kwhist3(ha, x, y, z, w)
normalize	kwhists(ha, norm)	kwhists2(ha, norm)	kwhists3(ha, norm)
print	kwhistp(ha, fn)	kwhistp2(ha, fn)	kwhistp3(ha, fn)
add info.	kwhistai(ha, title, categ, dNunit, logv, pw, axis-label, axis-unit)	kwhistai2(ha, title, categ, dNunit, logv, pw, axis-label, axis-unit, axis-label, axis-unit)	kwhistai3(ha, title, categ, dNunit, logv, pw, axis-label, axis-unit, axis-label, axis-unit, axis-label, axis-unit)
directory	kwhistdir(ha, dir)	kwhistdir2(ha, dir)	kwhistdir3(ha, dir)
id(key)	kwhistid(ha, id)	kwhistid2(ha, id)	kwhistid3(ha, id)
thinning		kwhiststep2(ha, step)	kwhiststep3(ha, step, step)
event #	kwhistev(ha, no)	whistev2(ha, no)	kwhistev3(ha, no)
free array	kwhistd(ha)	kwhistd2(ha)	kwhistd3(ha)
add 2 histo	kwhista(ha1,ha2,ha)	kwhista2(ha1,ha2,ha)	kwhista3(ha1,ha2,ha)
read from file	kwhistr(ha, fn, con)	kwhistr2(ha, fn, con)	kwhistr2(ha, fn, con)
write to file	kwhistw(ha, fn)	kwhistw2(ha, fn)	kwhistw3(ha, fn)