
Subject: Re: Histogram saga

Posted by [David Fanning](#) on Mon, 22 May 2006 13:26:50 GMT

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Daelomin writes:

```
> I just looked at all the archives with histogram related problems..
>
> I am quite surprised to see that it's not fixed in 6.2. I recently had
> a problem with my data: I plot 86140 points of data that range from
> [8,75] but somehow IDL creates bogus values between 0 & 8 !!
>
> If I include another point in the array (say array2=fltarr(86141) &
> array2[0:86139]=array1[*]) which value is 0, I then get the proper
> histogram I would have expected. Namely it has a flat line between 0 &
> 8 and picks up at the minimum...
>
> I just find this really really weird...
```

Well, we'll add it to the list... :-)

Pretty much everyone, by now, has learned how to fudge the HISTOGRAM output to get something that looks more like a histogram plot.

Here is how I do it:

```
; *****
;
; Calculate the histogram.

histdata = Histogram(image, Binsize=binsize, Max=Max(image), $
    Min=Min(image))

; Have to fudge the bins and histdata variables to get the
; histogram plot to make sense.

npts = N_Elements(histdata)
halfbinsize = binsize / 2.0
bins = Findgen(N_Elements(histdata)) * binsize + Min(image)
binsToPlot = [bins[0], bins + halfbinsize, bins[npts-1] + binsize]
histdataToPlot = [histdata[0], histdata, histdata[npts-1]]
xrange = [Min(binsToPlot), Max(binsToPlot)]

Plot, binsToPlot, histdataToPlot, PSym=10, Color=dataColor

; Make histogram boxes by drawing lines in data color.

FOR j=1L,N_Elements(bins)-2 DO BEGIN
    PlotS, [bins[j], bins[j]], [!Y.CRange[0], histdata[j] < max_value], $
        Color=dataColor
```

ENDFOR

. *****
,

Cheers,

David

--

David Fanning, Ph.D.

Fanning Software Consulting, Inc.

Coyote's Guide to IDL Programming: <http://www.dfanning.com/>

Subject: Re: Histogram saga

Posted by [JD Smith](#) on Mon, 22 May 2006 19:44:53 GMT

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On Mon, 22 May 2006 07:26:50 -0600, David Fanning wrote:

> Daelomin writes:

>

>> I just looked at all the archives with histogram related problems..

>>

>> I am quite surprised to see that it's not fixed in 6.2. I recently had a
>> problem with my data: I plot 86140 points of data that range from [8,75]
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>> histogram I would have expected. Namely it has a flat line between 0 & 8
>> and picks up at the minimum...

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>

> Well, we'll add it to the list... :-)

>

> Pretty much everyone, by now, has learned how to fudge the HISTOGRAM
> output to get something that looks more like a histogram plot. Here is how
> I do it:

That's just a deficiency of the PSYM=10, and is a plotting issue (one we all come across eventually). The original poster claims HISTOGRAM is inventing values where there are none. I find this highly doubtful. Try LOCATIONS=I and ensure your bin locations are where you think there are.

JD

Subject: Re: Histogram saga

Posted by [David Fanning](#) on Mon, 22 May 2006 20:11:33 GMT

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JD Smith writes:

- > That's just a deficiency of the PSYM=10, and is a plotting issue (one
- > we all come across eventually). The original poster claims HISTOGRAM
- > is inventing values where there are none. I find this highly doubtful.
- > Try LOCATIONS=I and ensure your bin locations are where you think
- > there are.

I thought he was saying HISTOGRAM invented values, too, when I read the article initially. But he was definitely talking about "plotting", and I can see how you might think there was an invented value if you plotted a histogram. At the very least, you suspect *something* is wrong!

But I didn't give any credibility to invented values, either.

Cheers,

David

--

David Fanning, Ph.D.

Fanning Software Consulting, Inc.

Coyote's Guide to IDL Programming: <http://www.dfanning.com/>

Subject: Re: Histogram saga

Posted by [JD Smith](#) on Mon, 22 May 2006 22:05:24 GMT

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On Mon, 22 May 2006 14:11:33 -0600, David Fanning wrote:

- > JD Smith writes:
- >
- >> That's just a deficiency of the PSYM=10, and is a plotting issue (one we
- >> all come across eventually). The original poster claims HISTOGRAM is
- >> inventing values where there are none. I find this highly doubtful. Try
- >> LOCATIONS=I and ensure your bin locations are where you think there are.
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- > article initially. But he was definitely talking about "plotting", and I
- > can see how you might think there was an invented value if you plotted a
- > histogram. At the very least, you suspect *something* is wrong!

Ahah, right you are. I wonder why someone hasn't written a full purpose histogram plotting tool with shading and other nice features? Maybe somebody has... My routines which plot histograms look very, very sad with all that half bin offsetting malarkey. It's pretty bad when the HISTOGRAM calls themselves are easier to read and interpret than the code to plot their results.

JD

Subject: Re: Histogram saga
Posted by [David Fanning](#) on Tue, 23 May 2006 00:01:15 GMT
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JD Smith writes:

- > I wonder why someone hasn't written a full purpose
- > histogram plotting tool with shading and other nice features?

Probably because I have mentioned too often on this newsgroup what a lot of grief I get over my COLORBAR routine. And for the same reason: it sounds like a general purpose program to do this one simple thing would be an easy program to write, but it is MUCH harder in practice to write something general than it is to write something specific.

I could write 10 *specific* COLORBAR programs in the time it takes to write one general (and usually compromised) one. HISTOGRAMS, I find, are the same way. I've flirted with them, and my book even contains one that I've used in various ways. But each histogram is so different, that I've never liked any of my routines for a *general* routine. I usually use the one I have as a pattern for the others, tweaking as necessary.

Cheers,

David

--

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