Subject: Re: Reversing an axis with IDLgrAxis
Posted by davidf on Mon, 01 Feb 1999 08:00:00 GMT

Mark Hadfield (m.hadfield@niwa.cri.nz) writes in response to
Peter Connell:

>> OK, I give. I would like to plot an axis (object graphics) with values
>> descending rather than ascending in the normal positive direction. I can do
>> this using (XY)COORD_CONV, but when I do, the tick text and axis title are
>> reversed as well (mirror image) and I can't figure out how to reverse them
>> back to read normally.
>
> Plot against the inverse of the variable and get the labels you want via
> the TICKFORMAT property. The TICKFORMAT_NEGATIVE function below
> is designed to do this.
>
> function TICKFORMAT_NEGATIVE, Direction, Index, Value
>
>   return, (format_axis_values(-Value))[0]
>
> end

Very nice. But how in the world did you discover the
Format_Axis_Values function!? You're not one of those
people who read through the documentation for fun are
you? :-)

And why would you think a priori that this would work?

Cheers,

David

--
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Subject: Re: Reversing an axis with IDLgrAxis
Posted by Peter Connell on Tue, 02 Feb 1999 08:00:00 GMT

An update:

Mark Hadfield's solution is a very neat one and he identifies the actual
problem, which is that the Axis object always plots from smaller to larger
in the conventional positive direction. So I think the answer to Wayne
Baggett's suggestion is that there is no way to do that in object graphics.
Mark uses a Property of the Axis object which appears to have a somewhat
different intention to accomplish the desired result, although it requires
that the data and coordinate be manipulated outside of the object's
knowledge, which somewhat defeats the purpose of objects, I guess.
Unfortunately, Mark's solution doesn't work for my exat problem, since I was
trying to reverse a logarithmic axis. Applying Mark's approach produces
readable ticks and title, but now the log-spaced minor ticks are backwards!

Peter Connell wrote in message <795h53$75m$1@lll-winken.llnl.gov>...
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> this using (XY)COORD_CONV, but when I do, the tick text and axis title are
> reversed as well (mirror image) and I can't figure out how to reverse them
> back to read normally.
> Any help?
>
> Peter Connell
> connell2@llnl.gov
>
>
>

Subject: Re: Reversing an axis with IDLgrAxis
Posted by Wayne Baggett on Tue, 02 Feb 1999 08:00:00 GMT
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Peter Connell wrote:
>
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> this using (XY)COORD_CONV, but when I do, the tick text and axis title are
> reversed as well (mirror image) and I can't figure out how to reverse them
> back to read normally.
> Any help?
>
> Peter Connell
> connell2@llnl.gov

I've never done object graphics, but with the basic PLOT function, just specify
the axis range (e.g., !X.RANGE = [xmin,xmax]) with the "minimum" greater than
the "maximum".

Example:

```
x = findgen(500)/50.
y = 3.5*sin(x)*x
!y.range=[30.,-20.]
plot,x,y
```

Is there a similar mechanism for object graphics? If so, you might give it a try.

--
Wayne Baggett   x5011

Subject: Re: Reversing an axis with IDLgrAxis
Posted by Mark Hadfield on Tue, 02 Feb 1999 08:00:00 GMT
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> OK, I give. I would like to plot an axis (object graphics) with values
> descending rather than ascending in the normal positive direction. I can do
> this using (XY)COORD_CONV, but when I do, the tick text and axis title are
> reversed as well (mirror image) and I can't figure out how to reverse them
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Plot against the inverse of the variable and get the labels you want via
the TICKFORMAT property. The TICKFORMAT_NEGATIVE function below
is designed to do this.

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National Institute for Water and Atmospheric Research
PO Box 14-901, Wellington, New Zealand

****
```
;+
; NAME:
;   TICKFORMAT_NEGATIVE
;
; PURPOSE:
;   This function is designed for use with the TICKFORMAT property of
IDLgrAxis.
;   Given a real value, it returns a string representing the inverse of that
value.
;
; CATEGORY:
;   Miscellaneous
;   Object graphics
```

```
;
; CALLING SEQUENCE:
;   Result = FUNCTION_NAME(Direction, Index, Value)
;
; INPUTS:
;   Direction:  Axis direction, required by the TICKFORMAT interface but
ignored.
;
;   Index:     Axis index, required by the TICKFORMAT interface but
ignored.
;
;   Value:     The real value to be formatted.
;
; OUTPUTS:
;   The function returns a scalar string.
;
; EXPLANATION:
;   IDLgrAxis objects always have the values increasing from left to right.
;   The axis can be reversed, but then the axis labels are seen from behind!
;   So to get an axis with values decreasing from left to right, we have to
;   plot the inverse of the variable and reformat the axis labels.
;
; TO DO:
;   Allow format control via the DATA keyword.
;
; MODIFICATION HISTORY:
;   Mark Hadfield, Jun 1998:
;      Written.
;-

function TICKFORMAT_NEGATIVE, Direction, Index, Value

    return, (format_axis_values(-Value))[0]

end
```