Subject: Re: MEDIAN filtering and why it's not working
Posted by thompson on Thu, 11 Jun 1998 07:00:00 GMT
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"T Bowers" <tbowers@nrlssc.navy.mil> writes:

> Hi,
> How come

> print, median([0.0,1.0,1.5,2.0,5.0,6.0], 3, /EVEN)

> prints
> 0.00000 1.00000 1.50000 2.00000 5.00000 6.00000

> instead of
> 1.00000 1.00000 1.00000 5.00000 5.00000 5.00000

> Doesn't look like it's filtering anything to me, no matter what
> I set the filter width to.

> Actually, I'd really like it to print
> 1.00000 5.00000
> just the median of each filter width. I'm trying to filter spikes in
> time series data.
> I'm using IDL 5.02 and win95

One of the oddities of the median filter program is that it doesn't filter points near the edges of the array. It doesn't filter points if there aren't enough points on either side. In your example, with a filter width of three, then it won't filter the points on either end, because it needs one point before and one point after for each point it filters.

If I understand you correctly, I think you want to do something like the following. It would require that array be evenly divisible by the filter width.

```
array = [0.0,1.0,1.5,2.0,5.0,6.0]
n = n_elements(array) / 3
array = reform(array, 3, n, /overwrite)
for i=0,n-1 do array(*,i) = median(array(*,i))
array = reform(array, 3*n, /overwrite)
```

This would give you

1.00000 1.00000 1.00000 5.00000 5.00000 5.00000

as you request. However, the last step would probably be better implemented as

array = reform(array(0,*), /overwrite)

to remove the repeated entries. This would give you simply

1.00000 5.00000

William Thompson
