Subject: Re: How to create a 2D mask that automatically half's an irregularly shaped 2D array from top to bottom?
Posted by Dr G. on Tue, 22 Nov 2011 22:47:43 GMT
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On Nov 19, 7:59 am, Jeremy Bailin <astroco...@gmail.com> wrote:
> On 11/18/11 2:53 PM, Jeremy Bailin wrote:
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>> On 11/18/11 10:04 AM, Dr G. wrote:
>>> Hi Folks,
>
>>> Q: Can the IDL geometry geniuses out there think of a fast way to
>>> create a 2D mask that automatically half's an irregularly shaped 2D
>>> array along its x axis (i.e., from top to bottom) Eg:
>
>>> [0,0,0,0,0,0,0,0,0,0,1,1,0,0,0,0]
>>> [0,0,0,0,0,0,0,1,1,1,1,0,0,0,0,0]
>>> [0,0,0,0,1,1,1,1,1,1,0,0,0,0,0,0]
>>> [0,0,0,0,0,0,0,1,1,1,1,0,0,0,0,0]
>>> [0,0,0,0,0,0,0,0,1,1,1,1,1,0,0,0]
>>> [0,0,0,0,0,0,0,0,1,1,1,1,1,1,0,0]
>>> [0,0,0,0,0,0,1,1,1,1,1,1,1,0,0,0]
>>> [0,0,1,1,1,1,1,1,1,1,0,0,0,0,0,0]
>>> [0,0,0,1,1,1,1,1,1,1,0,0,0,0,0,0]
>>> [0,0,0,0,1,1,1,0,0,0,0,0,0,0,0,0]
>>> [0,0,0,1,1,1,1,1,1,1,0,0,0,0,0,0]
>>> [0,1,1,1,1,1,1,1,1,1,1,1,0,0,0,0]
>
>>> Merci.
>
>>> Gf
>
>> If the input mask is "inmask":
>
>> ; how many 1s are there?
>> rowtot = total(inmask, 1, /int)
>> ; and it by checking if the cumulative total along the row is less
>> ; than half of rowtot
>> outmask = inmask and (total(inmask, 1, /int, /cumul) le $
>> rebin(transpose(rowtot/2), masksize, /sample))

>
>> -Jeremy.
>
> Oops, missed the first line when I copied that in:
>
> masksize = size(inmask, /dimen)
>
> -Jeremy.

Hi Jeremy,

This is pretty amazing. Much better than a nasty for-next for each row. Thank you. This is truly geometry genius. My intention is to apply your method to masks 60,000 rows deep!!! So far in my tests, your solution rapidly works for most situations, but the output is a little strange when the input mask is very strangely shaped. One alternative to this, is to rotate the mask 90 degrees so that columns become rows, and then apply it.

Jeremy, can you please take a moment and explain to me how the rebin & transpose combo works? I've read the help file on these but cannot figure it out the geometry genius you use.

Additionally, you write "...and it by checking if the cumulative total ..." do you mean 'add it...'?

Thank you for your consideration.

Dr G.