
Subject: Adding or averaging multiple grid arrays returns all NaNs

Posted by [Luke Conibear](#) on Wed, 17 Feb 2016 12:34:50 GMT

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Hi,

I have a 2D grid array (lon, lat) for each day of my data:

```
GRID          FLOAT    = Array[3999, 1999]
```

This array is dispersed with values and plots to a map nicely.

When I add multiple grids together or average them (as below), every value in the 2D array turns to NaN, so the plot is blank.

```
TOTAL_GRID    FLOAT    = Array[3999, 1999]
total_grid = total_grid + grid
MEAN_GRID     FLOAT    = Array[3999, 1999]
mean_grid  = total_grid / n_days
```

Does anyone know a solution, as looping for every lat and lon cell would be very computationally expensive for my large data set?

Thanks,
Luke

Subject: Re: Adding or averaging multiple grid arrays returns all NaNs

Posted by [Dick Jackson](#) on Thu, 18 Feb 2016 17:47:12 GMT

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On Wednesday, 17 February 2016 04:34:53 UTC-8, Luke Conibear wrote:

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>

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>
> Thanks,
> Luke

Hi Luke,

Good question! Am I right that 'NaN' in your data would be treated the same as zero? (It looks like it, since you divide the total by n_days) If so, preparing a "real_grid" from "grid" would work. You could do this before adding grid to total_grid:

```
grid[Where(Finite(grid, /NAN))] = 0
```

If you needed to track which grid elements always had NaN, there are ways to handle that too. Let us know if this is sufficient.

--

Cheers,
-Dick

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Subject: Re: Adding or averaging multiple grid arrays returns all NaNs
Posted by [Luke Conibear](#) on Thu, 18 Feb 2016 22:48:56 GMT
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Hi Dick,

I've done this and it works to produce a plot, though the magnitude of values is wrong.

I think it's because I'm dividing the total grid by the overall number of days, even though some of the cells only had data for a couple of days within that time frame. I need to somehow only divide cells by the number of days that that cell had a value for.

Any thoughts?

Subject: Re: Adding or averaging multiple grid arrays returns all NaNs
Posted by _____ on Fri, 19 Feb 2016 13:05:35 GMT
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Make n_days an array of the same size as total_grid. Then each time you add values to some

cells in total_grid, also add unity to the corresponding cells in n_days. Then do the final division by n_days only for the elements where n_days is non-zero.

Subject: Re: Adding or averaging multiple grid arrays returns all NaNs

Posted by [Luke Conibear](#) on Fri, 19 Feb 2016 17:16:46 GMT

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Hey Mats

That worked well thanks. I just need to remove a few erroneous very high values that are scattered across the plot. I'll research into a screening process to filter out these "bad" data
