Subject: Regridding routines
Posted by sdj on Sat, 05 Mar 2005 16:49:12 GMT
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Dear All,

This is an ongoing problem I cannot seem to solve.

I have some data in array a = fltarr(4320, 2160) which I need to regrid to an array b = fltarr(4096, 2048).

The data in 'a' are ocean related with valid values appearing only on the sea pixels, all land pixels are set to some default value (say -9999.0).

All the methods I tried using to regrid the data introduce a substantial error.

I assume the problem lies in the fact that all regridding (interpolation) functions always take into account the non-valid (land) values. I can minimize this effect by setting their value equal to zero, but this still does not solve the problem. What I would like is to have the opportunity of setting the non-valid values to say a NaN, and then having the functionality of /NaN keyword in a regridding function (just like the 'total' function)

Here are some examples of the errors I introduce:

```
a_v  = where(a GT 0.0,complement = a_nv)
a(a_nv) = 0.0
print, mean(a(a_v))
-> 0.307170
```

Say I use the 'expand' function:

```
expand,  a, 4096, 2048, b
b_v = where(b GT 0.0)
print, mean(b(b_v))
-> 0.288994
```

Say I use the congrid function:

```
c = congrid(a, 4096, 2048, /interp)
c_v = where(c GT 0.0)
print, mean(c(c_v))
--> 0.289111
```

Interpolate and bilinear introduce the same kind of errors.

Can anybody tell me what I need to do in order to regrid safely without

introducing too much a big error due to non-valid data pixels ?

Thanks in advance for the help.

Regards,
Pepe

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