Subject: IDL Grib Routines
Posted by Chip Helms on Wed, 14 Aug 2013 16:57:03 GMT
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Hi all,

I'm trying to read GFS model winds out of grib2 files using Mark Piper's helper routines and I've run into an issue. The record indices for the wind components are designated as floats with '.1' for UGRD and '.2' for VGRD. Since Mark Piper's grib helper routines assume that the index is an integer, they return UGRD data for both '.1' and '.2' indices. I'm curious if anyone else has run into this issue and if anyone knows a work around for it?

Here's an example of the wgrib2 inventory output for UGRD and VGRD variables as well as a variable that has an integer index for comparison:

109.1:18590308:d=2013081306:UGRD:850 mb:anl:
109.2:18590308:d=2013081306:VGRD:850 mb:anl:
110:19009437:d=2013081306:TMP:10 mb:anl:

The files I'm opening are the operational analysis (the same issue arises with the operation forecast files as well). Worst case scenario, I can convert the files to netcdf and then open them, but that is a rather time consuming process.

Thanks in advance,
Cheers,
Chip

Subject: Re: IDL Grib Routines
Posted by Fabzi on Wed, 14 Aug 2013 17:22:10 GMT
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Hi Chip,

On 08/14/2013 06:57 PM, Chip Helms wrote:
> Worst case scenario, I can convert the files to netcdf and then open
> them, but that is a rather time consuming process.

This is what we decided to do. NetCDF is in many ways easier than GRIB.
Several tools also propose a NCDF4 compression "on the fly" which is
more time consuming but on the long term actualy quite efficient since
you have to do it once and only once nd you spare disk space.

We use NCL for this, with the command:

ncl_convert2nc fnl_file.grib -cl 5 -nc4c

Subject: Re: IDL Grib Routines
Posted by Mark Piper on Thu, 22 Aug 2013 20:37:27 GMT
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On Wednesday, August 14, 2013 10:57:03 AM UTC-6, Chip Helms wrote:
>
> I'm trying to read GFS model winds out of grib2 files using Mark Piper's helper routines and I've run into an issue. The record indices for the wind components are designated as floats with '.1' for UGRD and '.2' for VGRD. Since Mark Piper's grib helper routines assume that the index is an integer, they return UGRD data for both '.1' and '.2' indices. I'm curious if anyone else has run into this issue and if anyone knows a work around for it?
>

Hi Chip,

Setting the MULTI_SUPPORT keyword on GRIB_INVENTORY or GRIB_GET_RECORD should fix this. Here's wgrib2 output for a GFS file with multi-field records:

```
1:0:d=2012051012:HGT:10 mb:anl:
2:15679:d=2012051012:TMP:10 mb:anl:
3:22323:d=2012051012:RH:10 mb:anl:
4.1:23802:d=2012051012:UGRD:10 mb:anl:
4.2:23802:d=2012051012:VGRD:10 mb:anl:
5:48782:d=2012051012:ABSV:10 mb:anl:
...
```

To get the 10 mb V wind component, record 4.2, use 5 as the index:

```
IDL> f = 'gfs.t12z.pgrbf00.2p5deg.grib2'
IDL> r5 = grib_get_record(f, 5, /structure, /multi_support)
IDL> print, r5.parametername, r5.level
v-component of wind          10
```

Index 6 would then give the 10 mb absolute vorticity, etc.

I know this is a clumsy interface. I'll have to think about a better way to handle multi-field records. Do you (or anyone) have any suggestions?

mp