Programación Numérica en Geofísica

PNG

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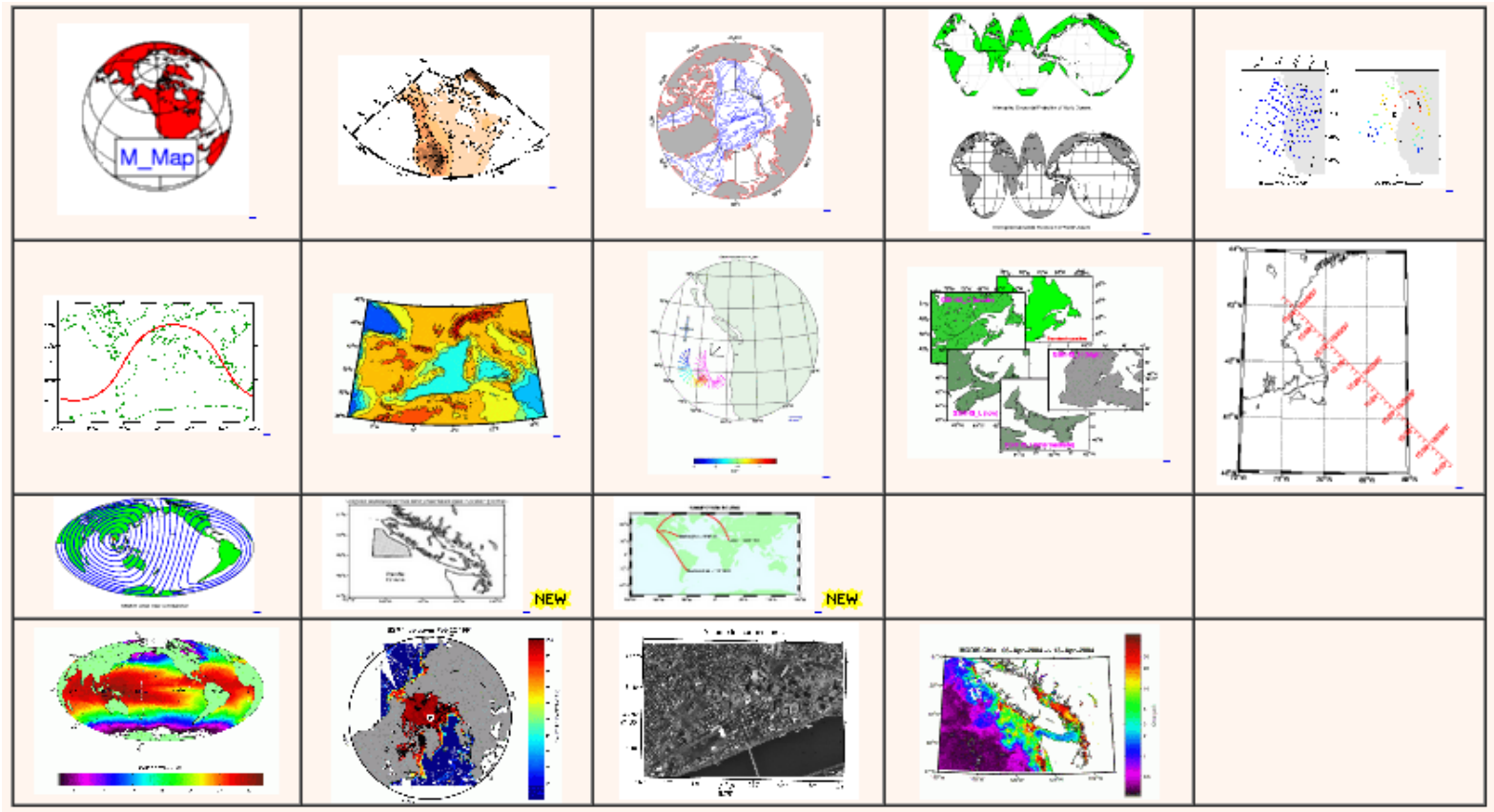
Anuncios

- Hoy: **Mapas**
- GMT, Python (BaseMap/Cartopy), IDV, Grads, ...

m_map - Rick Pawlowicz

m_map

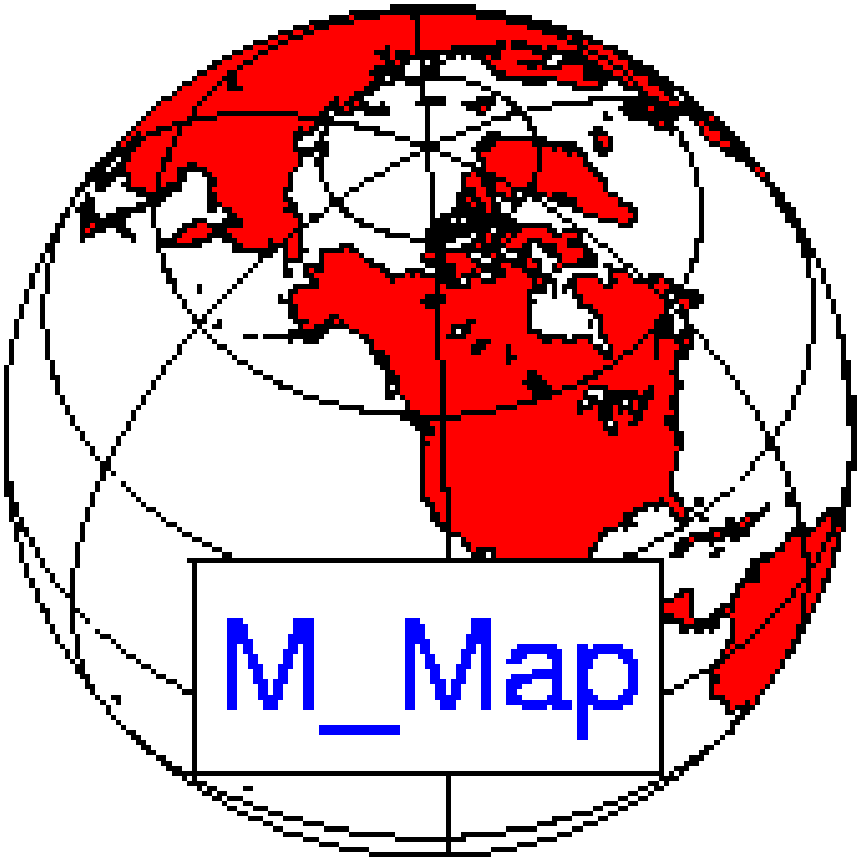


Mapas - M_MAP

Logo

```
m_proj('ortho','lat',48','long',-123');
m_coast('patch','r');
m_grid('linest','-','xticklabels',[],'yticklabels',[]);

patch(.55*[-1 1 1 -1],.25*[-1 -1 1 1]-.55,'w');
text(0,-.55,'M\_Map','fontsize',25,'color','b',...
    'verticalalignment','middle','horizontalalignment','center');
```

Logo M_Map

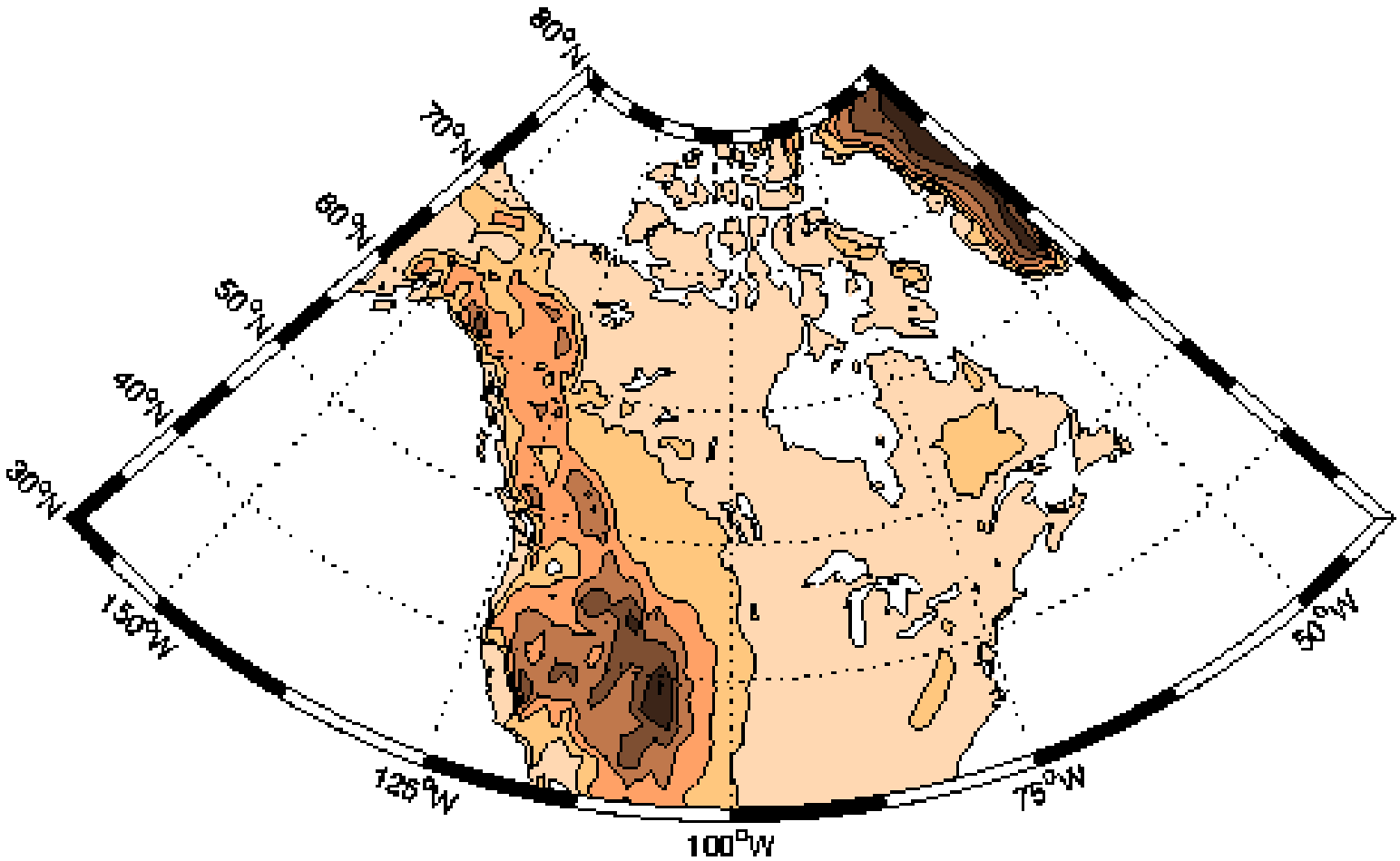


Matlab

Proyección Lambert Conformal

```
m_proj('lambert','long',[-160 -40],'lat',[30 80]);
m_coast('patch',[1 .85 .7]);
m_elev('contourf',[500:500:6000]);
m_grid('box','fancy','tickdir','in');
colormap(flipud(copper));
```

Lambert Conformal

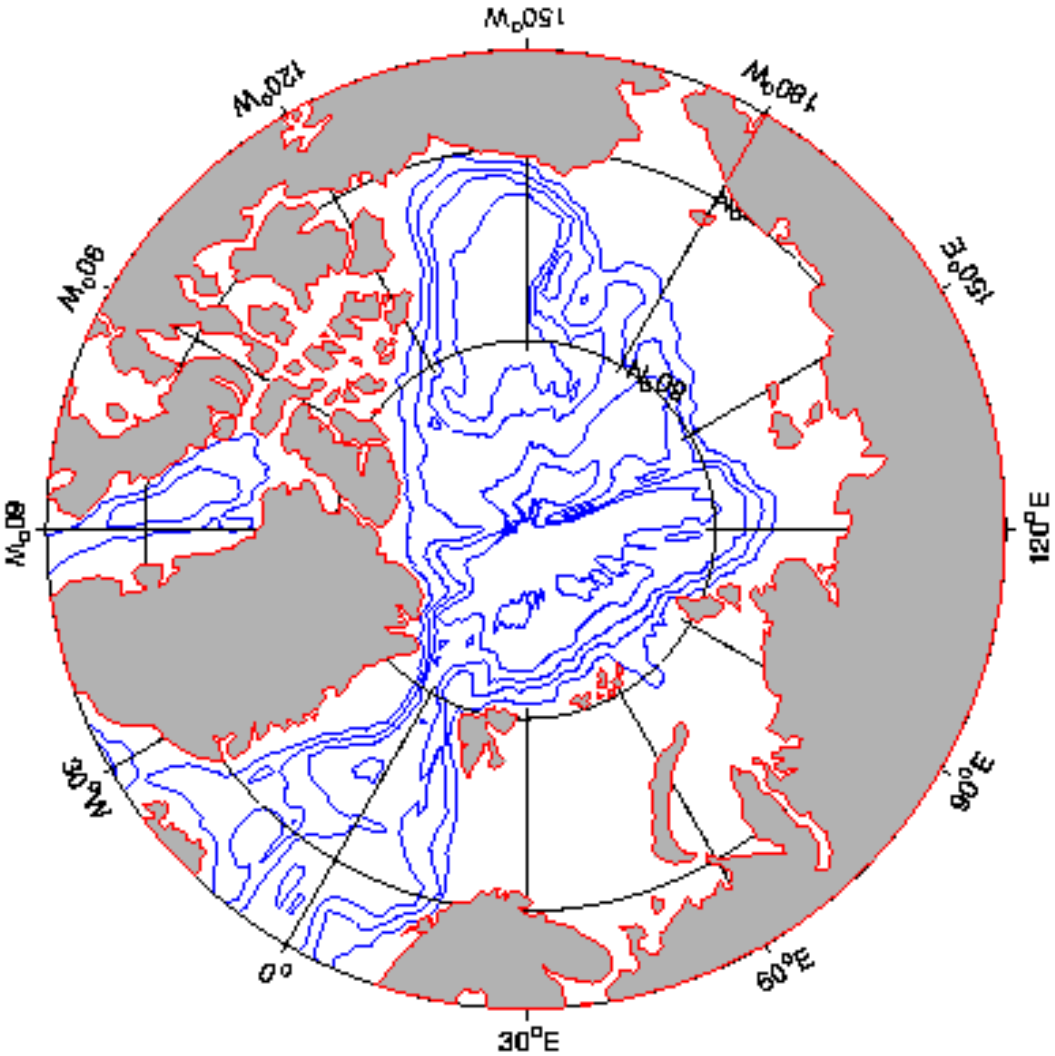


Matlab

Proyección Estereográfica

```
m_proj('stereographic','lat',90,'long',30,'radius',25);
m_elev('contour',[-3500:1000:-500],'edgecolor','b');
m_grid('xtick',12,'tickdir','out','ytick',[70 80],'linest','-');
m_coast('patch',[.7 .7 .7],'edgecolor','r');
```

Mapa del Polo Norte



Proyeción Miller

Miller

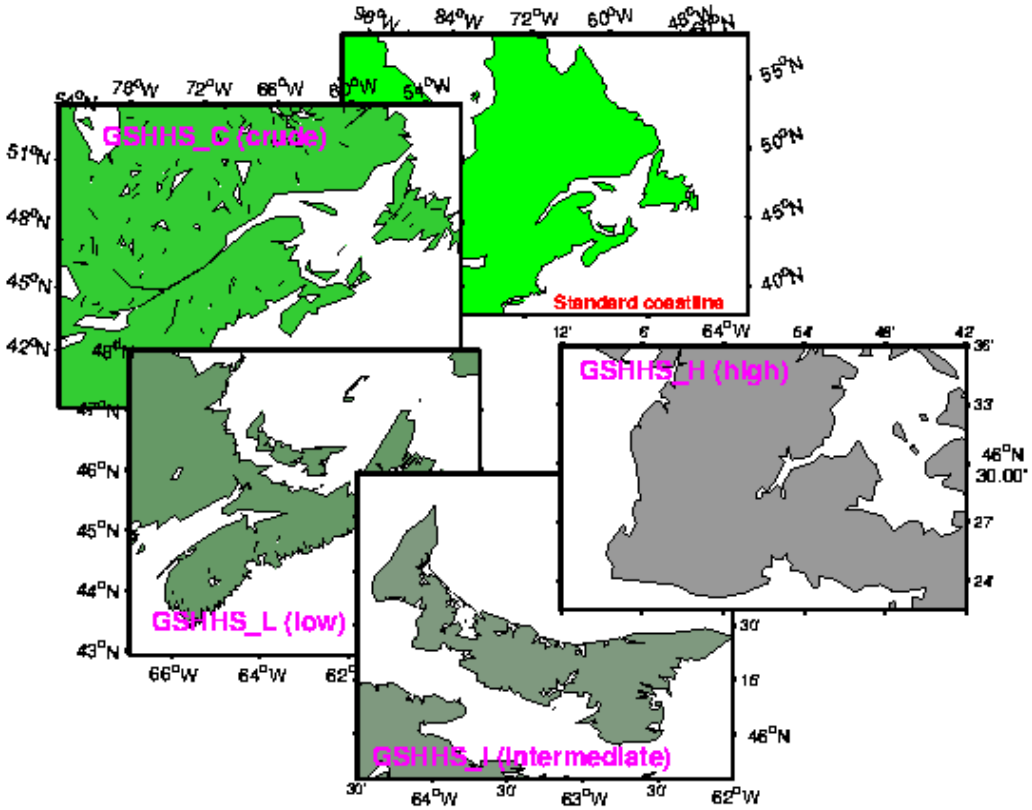
```
lon=[-180:180];
lat=atan(tan(60*pi/180)*cos((lon-30)*pi/180))*180/pi;

m_proj('miller','lat',82);
m_coast('color',[0 .6 0]);
m_line(lon,lat,'linewi',3,'color','r');
m_grid('linestyle','none','box','fancy','tickdir','out');
```


60°N
30°N
0°
30°S
60°S
180°W
120°W
60°W
0°
60°E
120°E
180°W

Proyección Alvers

Alvers Área Igual - Con Zoom

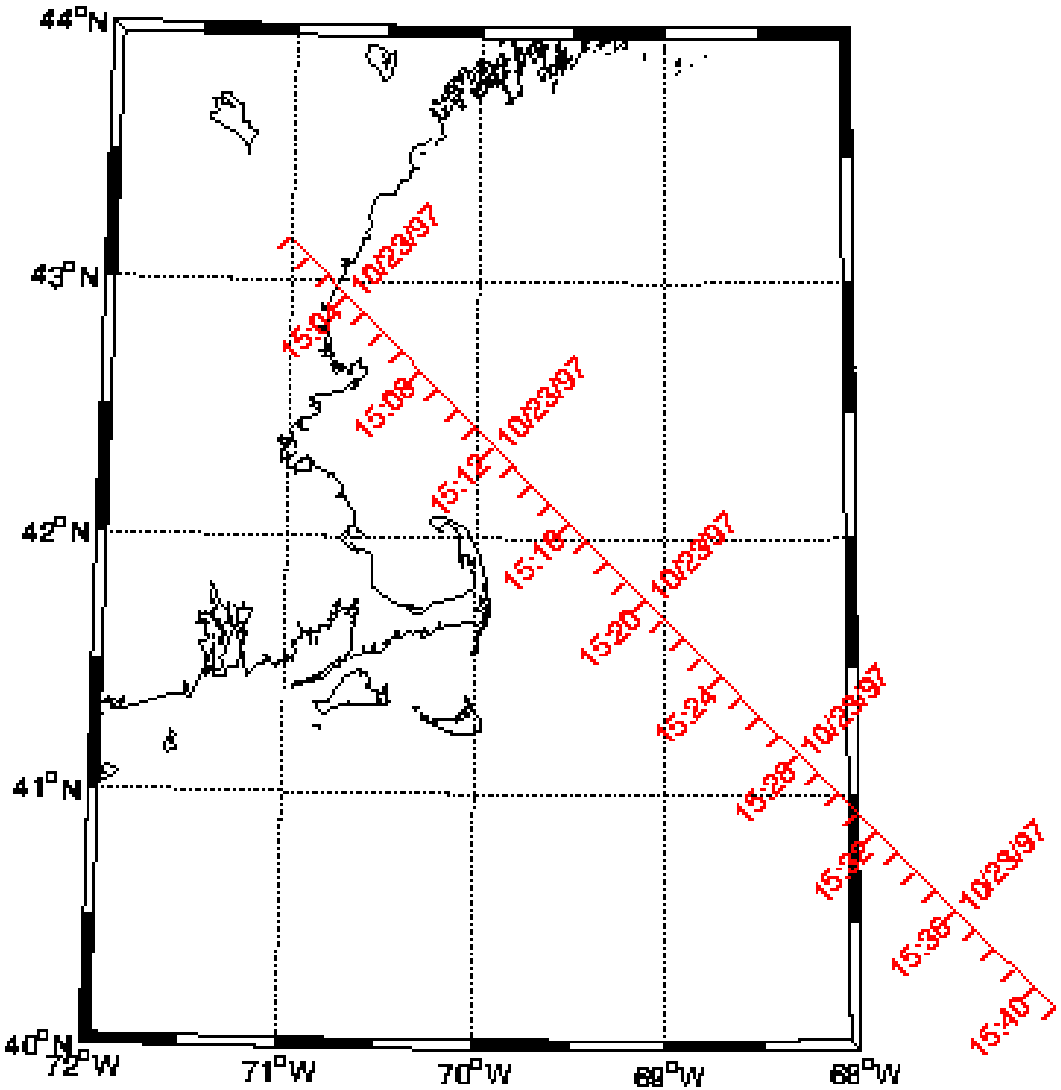
```
axes('position',[.35 .05 .37 .37]);
m_proj('albers equal-area','lat',[45.8 47.2],'long',[-64.5 -62],
       'rect','on');
m_gshhs_i('patch',[.5 .6 .5]);
m_grid('linest','none','linewidth',2,'tickdir','out','yaxisloc'
       ,'right');
m_text(-64.4,45.9,'GSHHS\_I (intermediate)','color','m',
       'fontweight','bold','fontsize',14);

axes('position',[.55 .23 .37 .37]);
m_proj('albers equal-area','lat',[46.375 46.6],'long',[-64.2 -63.7]
m_gshhs_h('patch',[.6 .6 .6]);
m_grid('linest','none','linewidth',2,'tickdir','out','xaxisloc','top
m_text(-64.18,46.58,'GSHHS\_H (high)','color','m','fontweight','bold
```


GSHHS_C (crude)
Standard coastline
GSHHS_H (high)
GSHHS_L (low)
GSHHS_I (intermediate)

M_Map

Trayectorias de Satélites

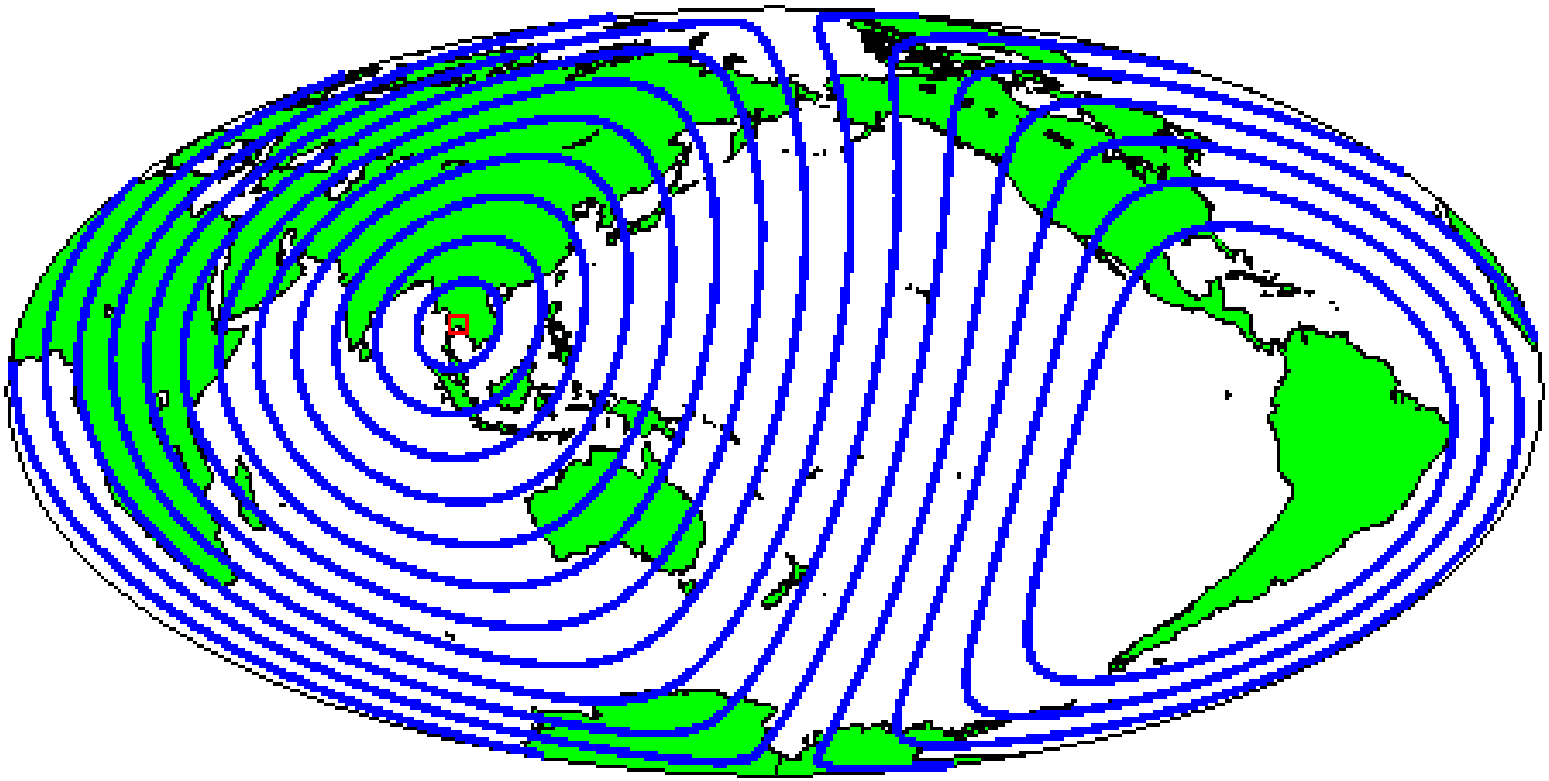
```
m_proj('UTM','long',[-72 -68],'lat',[40 44]);
m_gshhs_i('color','k');
m_grid('box','fancy','tickdir','in');

% fake up a trackline
lons=[-71:.1:-67];
lats=60*cos((lons+115)*pi/180);
dates=datenum(1997,10,23,15,1:41,zeros(1,41));

m_track(lons,lats,dates,'ticks',0,'times',4,'dates',8,...
        'clip','off','color','r','orient','upright');
```


44°N
43°N
42°N
41°N
40°N
72°W
71°W
70°W
69°W
68°W
15:04 10/23/97
15:08
15:12 10/23/97
15:16
15:20 10/23/97
15:24
15:28 10/23/97
15:32
15:36 10/23/97
15:40

M_Map

Anillos de Rango

```
m_proj('hammer','clong',170);
    m_grid('xtick',[],'ytick',[],'linestyle','-');
    m_coast('patch','g');
    m_line(100.5,13.5,'marker','square','color','r');
    m_range_ring(100.5,13.5,[1000:1000:15000],'color','b','linewi',2
    xlabel('1000km range rings from Bangkok');
```

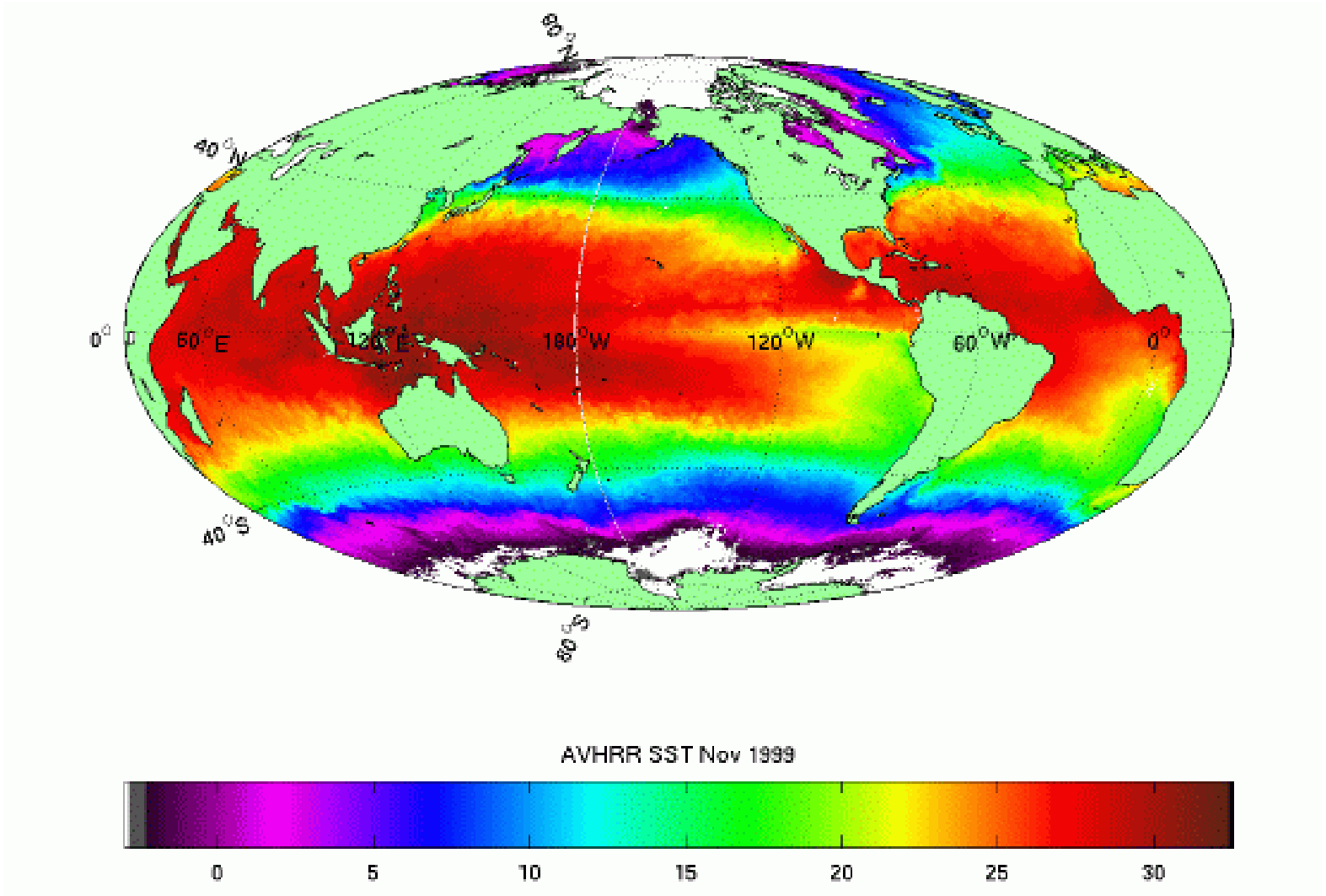


1000km range rings from Bangkok

M_Map

Mapas Globales SST

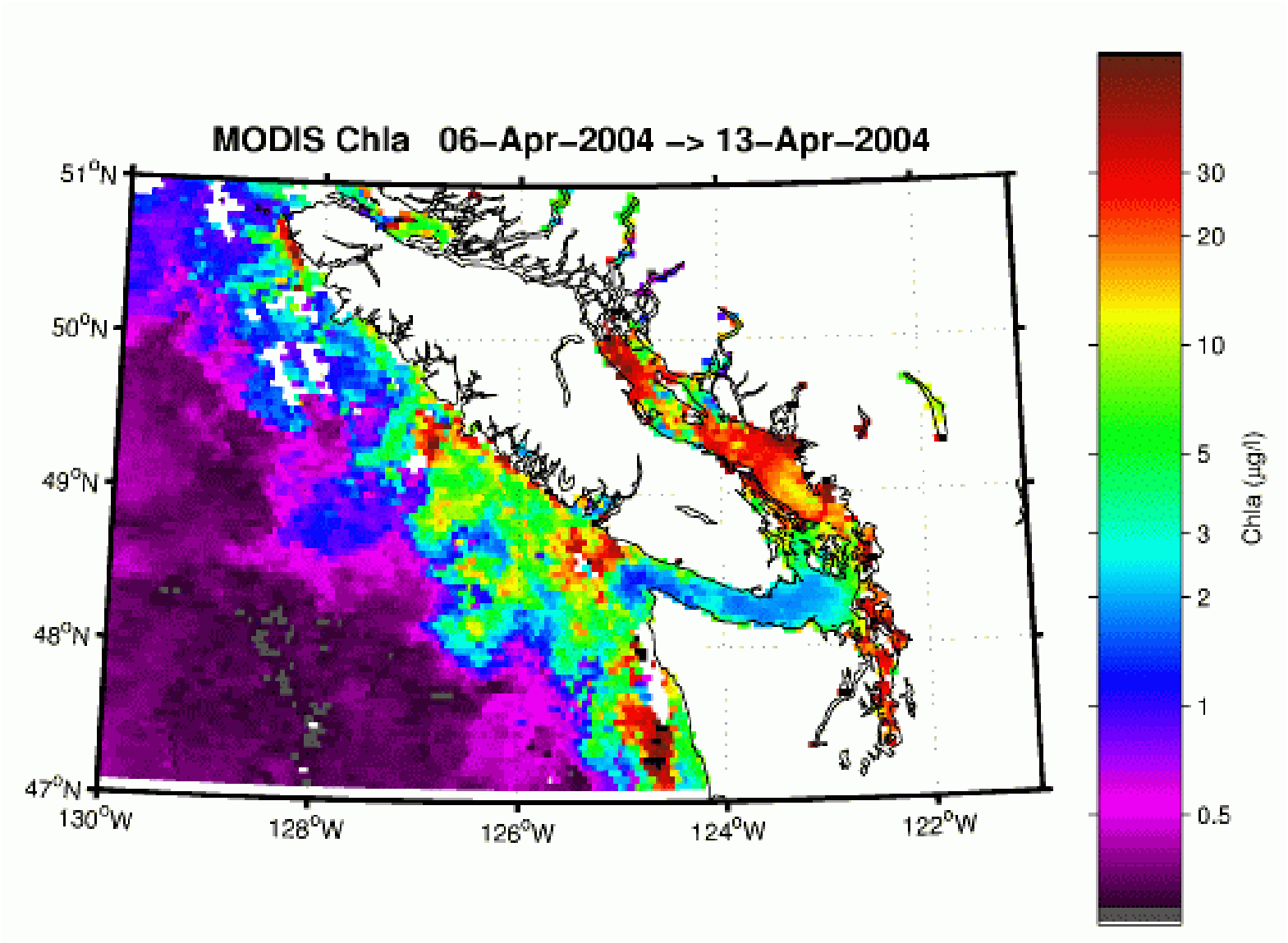
```
% NOAA/NASA Pathfinder AVHRR SST product
% http://podaac.jpl.nasa.gov/sst/

[P,map]=imread('../m_mapWK/199911h54ma-gdm.hdf');
Plat=90-.25-[0:359]*.5;Plon=-180+.25+[0:719]*.5;
[Plg,Plt]=meshgrid(Plon-0.25,Plat+0.25);

m_proj('hammer-aitoff','clongitude',-150);
m_pcolor(Plg,Plt,P);shading flat;colormap(map);
hold on;
m_pcolor(Plg-360,Plt,P);shading flat;colormap(map);

m_coast('patch',[.6 1 .6]);
m_grid('xaxis','middle');
h=colorbar('h');
set(get(h,'title'),'string','AVHRR SST Nov 1999');
```


80°N
40°N
0°
60°E
120°E
180°W
120°W
60°W
0°
40°S
80°S
AVHRR SST Nov 1999
0
5
10
15
20
25
30

M_Map

Chl_a Satelital

```
m_proj('lambert','lon',LONLIMS,'lat',LATLIMS);
m_pcolor(Plg,Plt,P);shading flat;
m_gshhs_i('color','k');;
m_grid('linewi',2,'tickdir','out');;
h=colorbar;
set(get(h,'ylabel'),'String','Chla (\mug/l)');
set(h,'ytick',log10([.5 1 2 3 5 10 20 30]),'yticklabel',
   [.5 1 2 3 5 10 20 30],'tickdir','out');
title(['MODIS Chla   ');
```

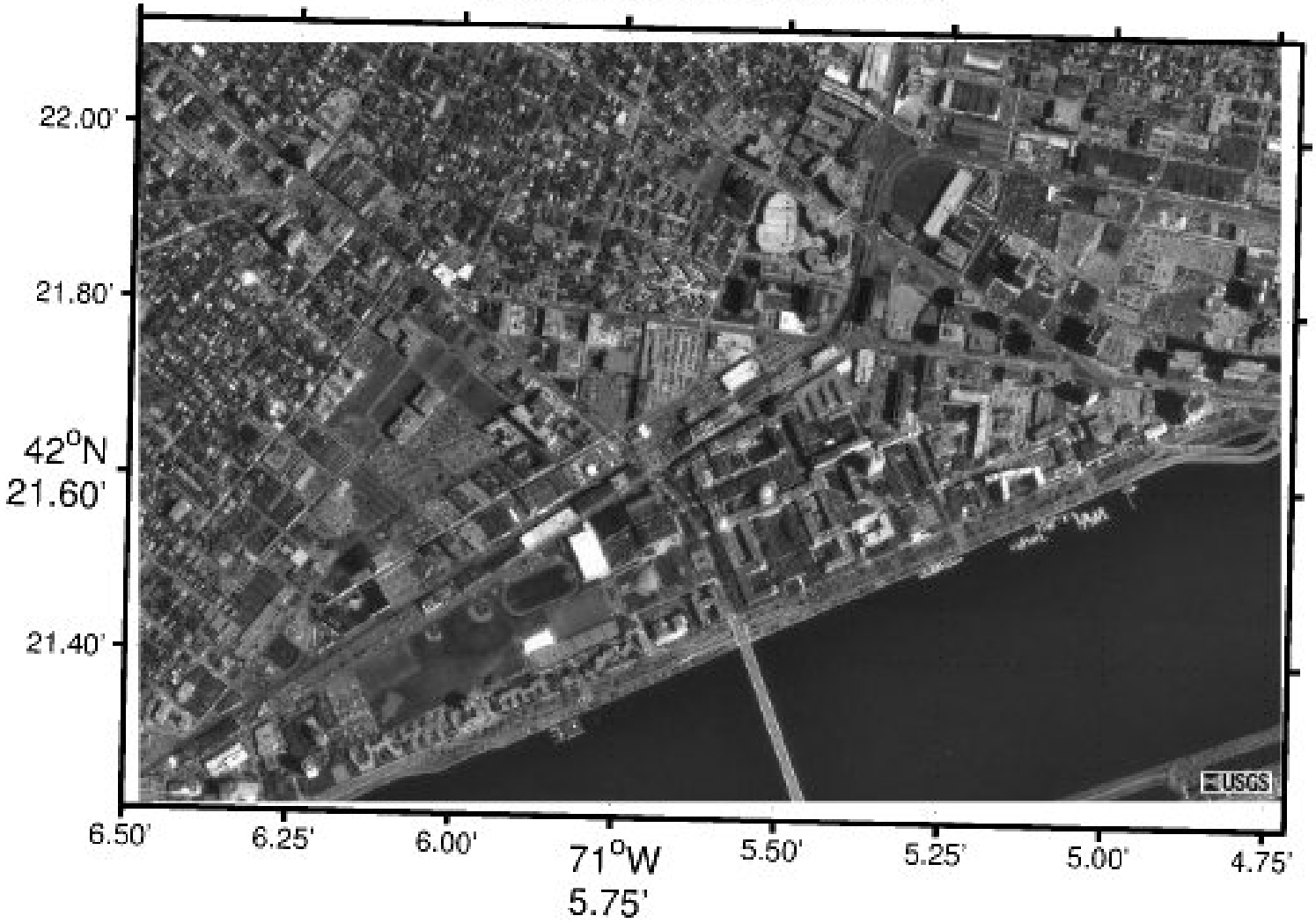

MODIS Chla 06–Apr–2004 –> 13–Apr–2004
51°N
50°N
49°N
48°N
47°N
130°W
128°W
126°W
124°W
122°W
30
20
10
5
3
2
1
0.5
Chla (µg/l)

M_Map

Proyección UTM

```
[P,map]=imread('../m_mapWK/oncehome.jpeg');

% Set the projection limits to the lat/long of image
% corners.
m_proj('UTM','long',[-71-6/60-30/3600 -71-4/60-43/3600],...
               'lat',[42+21/60+13/3600  42+22/60+7/3600],'ellipse',
                'wgs84');

clf;
image([326400 328800],[4692800 4691200],P);set(gca,'ydir',
   'normal');
m_grid('tickdir','out','linewi',2,'fontsize',14);
title('A home for certain nerds','fontsize',16);
```

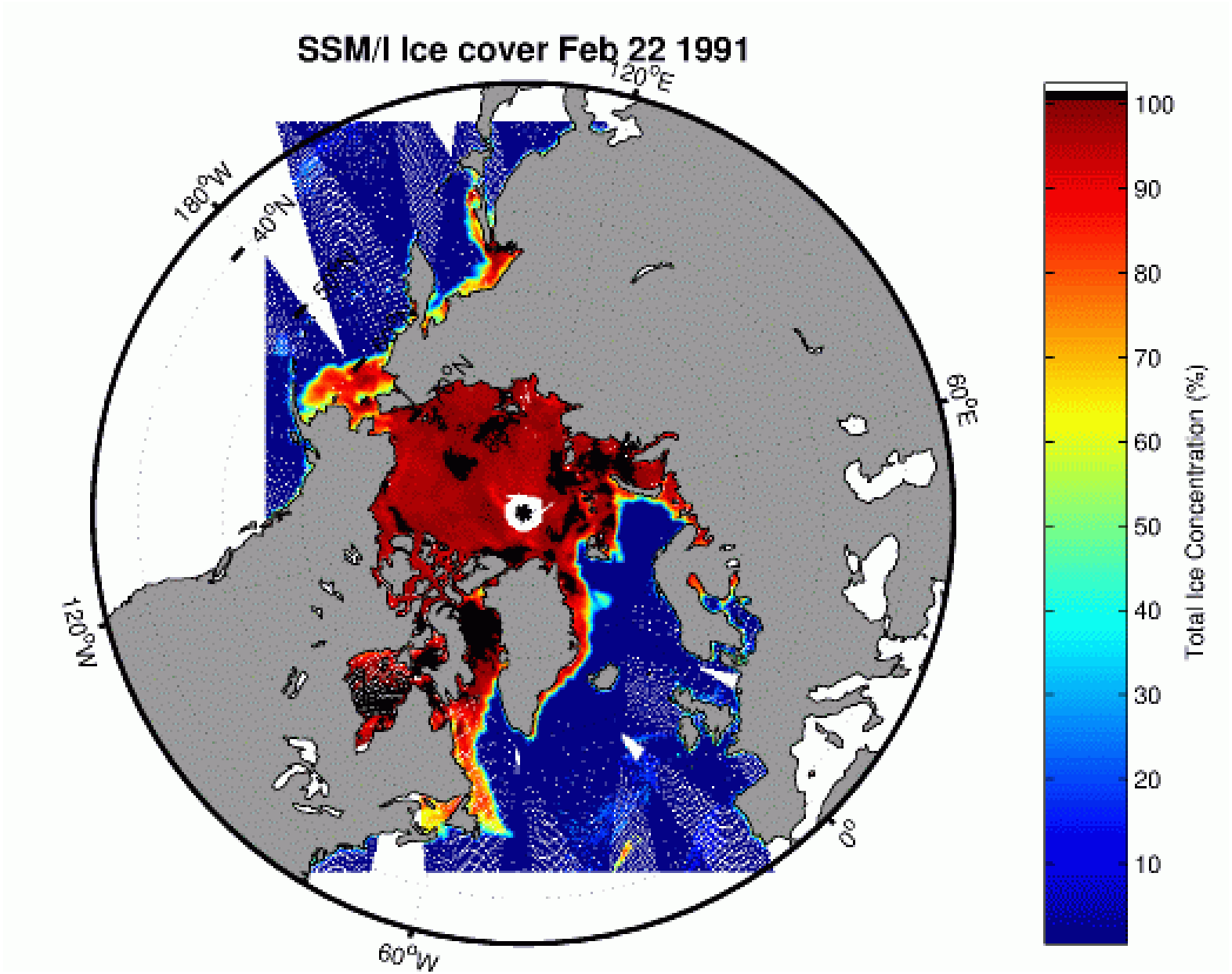
A home for certain nerds



M_Map

Hielo Marino - Artico

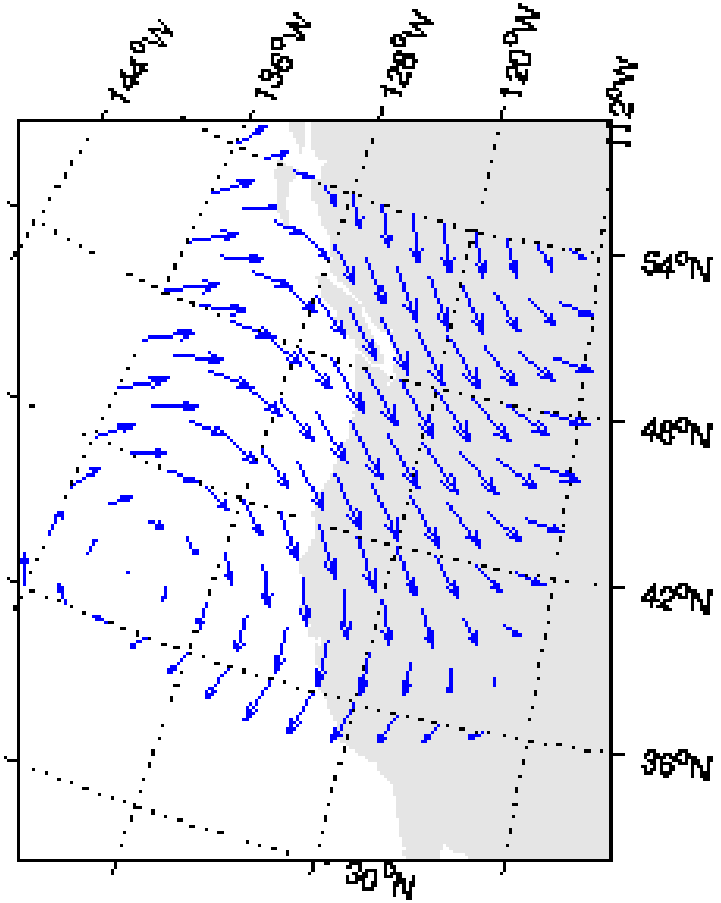
```
m_proj('stereographic','latitude',90,'radius',55,'rotangle',45);

[MAPX,dm]=m_ll2xy([279.26 350.03],[33.92 34.35],'clip','off');
[dm,MAPY]=m_ll2xy([168.35 279.26],[30.98 33.92],'clip','off');

image(MAPX,MAPY,P);set(gca,'ydir','normal');
colormap([jet(100);0 0 0;1 1 1]);

m_coast('patch',[.6 .6 .6]);
m_grid('linewi',2,'tickdir','out');
title('SSM/I Ice cover Feb 22 1991','fontsize',14,'fontweight'
      ,'bold');

h=colorbar('v');
set(get(h,'ylabel'),'string','Total Ice Concentration (%)');
```


SSM/I Ice cover Feb 22 1991
120°E
180°W
40°N
60°N
30°E
120°W
60°W
0°
100
90
80
70
60
50
40
30
20
10
Total Ice Concentration (%)

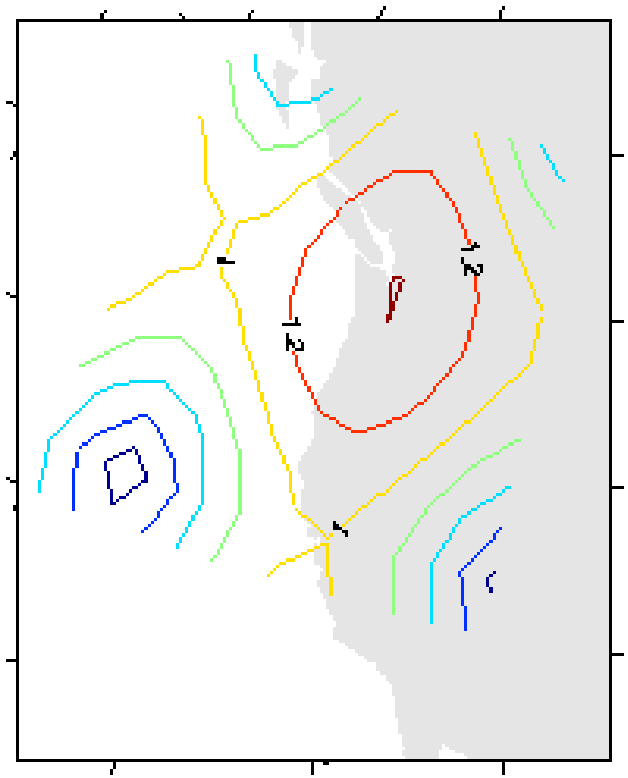
M_Map

Vectores - Subplot

```
m_proj('oblique','lat',[56 30],'lon',[-132 -120],'aspect',.8);
subplot(121);
m_coast('patch',[.9 .9 .9],'edgecolor','none');
m_grid('tickdir','out','yaxislocation','right',...
       'xaxislocation','top','xlabeldir','end','ticklen',.02);
hold on;
m_quiver(lon,lat,u,v);
xlabel('Simulated surface winds');
subplot(122);
m_coast('patch',[.9 .9 .9],'edgecolor','none');
m_grid('tickdir','out','yticklabels',[],...
       'xticklabels',[],'linestyle','none','ticklen',.02);
hold on;
[cs,h]=m_contour(lon,lat,sqrt(u.*u+v.*v));
clabel(cs,h,'fontsize',8);
xlabel('Simulated something else');
```



Simulated surface winds

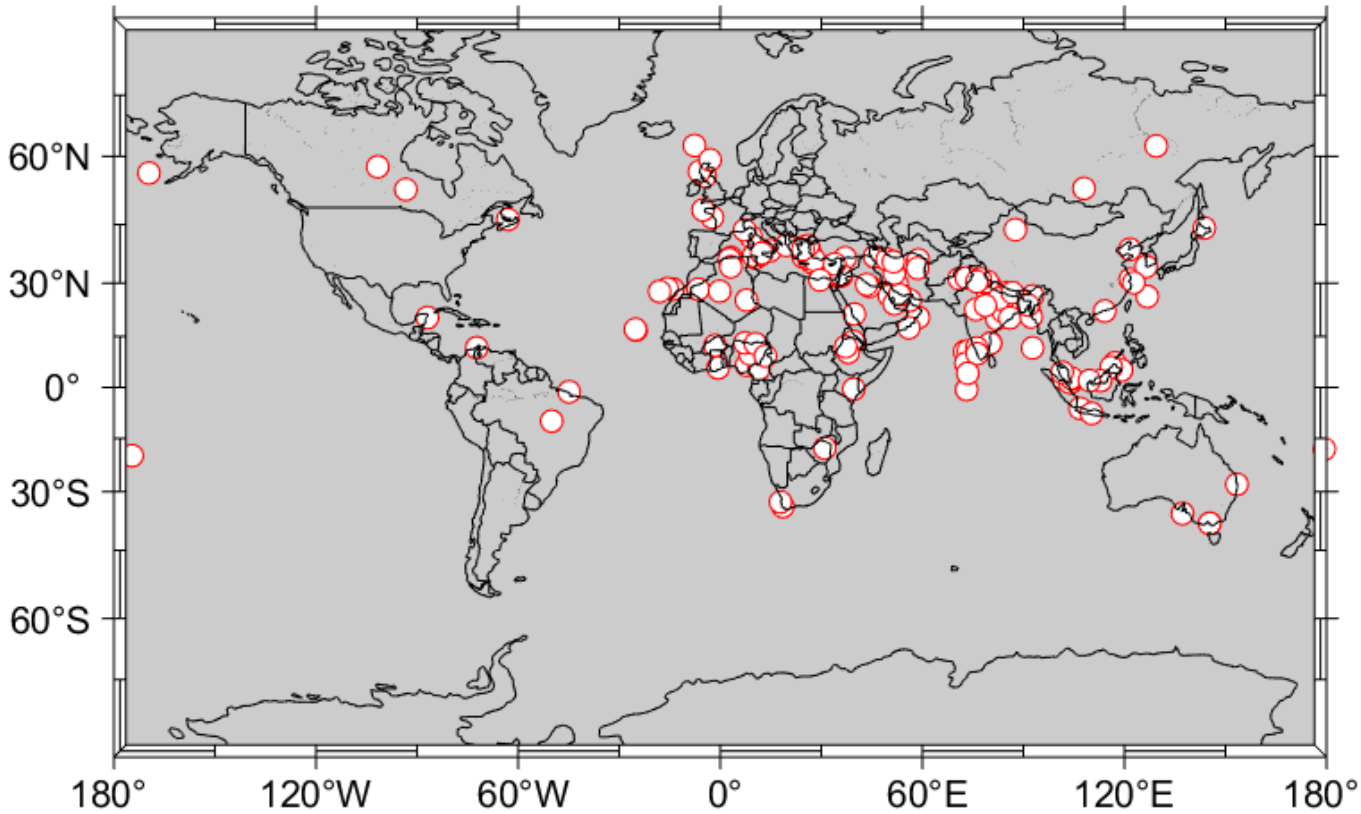


Simulated something else

M_Map

Proyectos de Energías Renovables

```
hres=csvread('Coordenadas.txt',2);
lon=hres(2:end,2);
lat=hres(2:end,1);
M=m_shaperead('C:\Users\dgeo\m_map\private\  ...
                                        ne_110m_admin_0_countries');
m_proj('miller','lat',82);
m_gshhs_l('patch',[.8 .8 .8],'edgecolor','none');
m_line(lon,lat,'marker','o','color','r',...
          'linest','none','markerfacecolor','w','clip','point');
for k=1:length(M.ncst)
     m_line(M.ncst{k}(:,1),M.ncst{k}(:,2),'color',[0 0 0]);
end;
m_grid('linestyle','none','box','fancy','tickdir','out');
```


60°N
30°N
0°
30°S
60°S
180°
120°W
60°W
0°
60°E
120°E
180°