1. Global Earthquakes

In [2]:

```
# Import modules
import numpy as np
import xarray as xr
import pandas as pd
import matplotlib.pyplot as plt
import matplotlib.ticker as mticker
import cartopy.crs as ccrs
import cartopy.feature as cfeature
%matplotlib inline
```

In [3]:

```
#读取数据
erda=pd.read_csv("usgs_earthquakes.csv")
erda
```

Out[3]:

	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	
0	2014-01-31 23:53:37.000	60.252000	-152.708100	90.20	1.10	ml	NaN	NaN	NaN	0
1	2014-01-31 23:48:35.452	37.070300	-115.130900	0.00	1.33	ml	4.0	171.43	0.342000	0
2	2014-01-31 23:47:24.000	64.671700	-149.252800	7.10	1.30	ml	NaN	NaN	NaN	1
3	2014-01-31 23:30:54.000	63.188700	-148.957500	96.50	0.80	ml	NaN	NaN	NaN	1
4	2014-01-31 23:30:52.210	32.616833	-115.692500	10.59	1.34	ml	6.0	285.00	0.043210	0
...	...	...	...	...	...	...	...	...	...	
120103	2014-12-01 00:10:16.000	60.963900	-146.762900	14.80	3.80	ml	NaN	NaN	NaN	0
120104	2014-12-01 00:09:39.000	58.869100	-154.415900	108.40	2.40	ml	NaN	NaN	NaN	0
120105	2014-12-01 00:09:25.350	38.843498	-122.825836	2.37	0.43	md	8.0	107.00	0.008991	0
120106	2014-12-01 00:05:54.000	65.152100	-148.992000	9.50	0.40	ml	NaN	NaN	NaN	0
120107	2014-12-01 00:04:05.000	60.227200	-147.024500	2.50	1.60	ml	NaN	NaN	NaN	0

120108 rows × 15 columns

In [23]:

```
#按照mag排序后，选择前50的数据并重新排序
erda_50=erda.sort_values('mag',ascending=False).iloc[0:50].reset_index(drop=True)
```

In [38]:

```
time=erda_50["time"]
latitude=erda_50["latitude"]
longitude=erda_50["longitude"]
mag=erda_50["mag"]
```

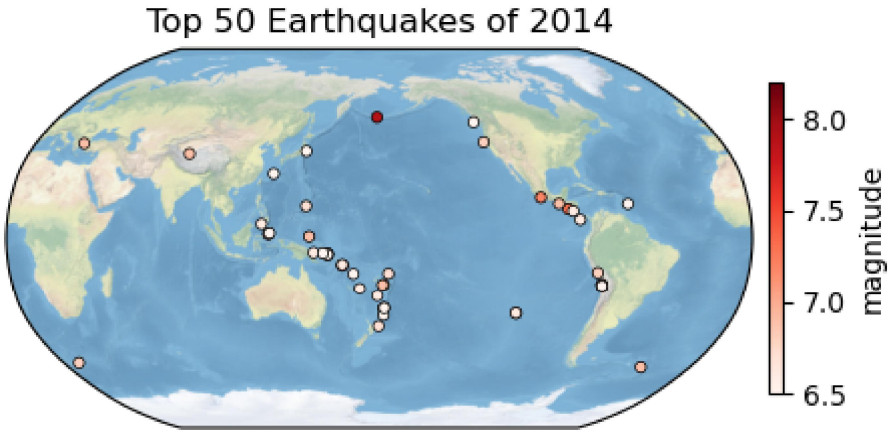
In [8]:

```
mag_max=mag.max()
mag_min=mag.min()
```

In [37]:

```
#建立绘图面板

plt.figure(figsize=(5,5), dpi=100)
#确定投影的类型
ax = plt.axes(projection=ccrs.Robinson(central_longitude=180))
ax.stock_img()
#绘图
ax.scatter(longitude,latitude,c=mag,transform=ccrs.PlateCarree(),vmin= mag_min, vmax= mag_max , cmap
#绘制颜色标签
cb=ax.figure.colorbar(ax.collections[0],fraction=0.02, pad=0.02,label = 'magnitude')
#标题
ax.set_title('Top 50 Earthquakes of 2014')
plt.show()
```



In [ ]:

In [ ]: