



EBook Gratuito

APPENDIMENTO

gdal

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#gdal

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Capitolo 1: Iniziare con gdal

Osservazioni

GDAL (Geospatial Data Abstraction Library) è una libreria software che fornisce strumenti per manipolare dati geospaziali raster e vettoriali.

Examples

Installazione su Linux

GDAL è disponibile nei repository predefiniti delle distribuzioni Linux più diffuse e può essere installato nello stesso modo in cui vengono installati i pacchetti in una distribuzione Linux.

```
apt-get install libgdal-dev
```

`CPLUS_INCLUDE_PATH` e `C_INCLUDE_PATH` sono necessari per includere queste librerie corrispondenti.

```
export CPLUS_INCLUDE_PATH=/usr/include/gdal
```

```
export C_INCLUDE_PATH=/usr/include/gdal
```

GDAL può anche essere installato con il `pip` gestore pacchetti Python.

```
xe pip install gdal
```

Leggi Iniziare con gdal online: <https://riptutorial.com/it/gdal/topic/7667/iniziare-con-gdal>

Capitolo 2: Leggere i raster con gdal

Examples

Leggi sottoinsieme di un raster globale definito da un riquadro di delimitazione

Apri un raster che copre il globo ed estrai un sottoinsieme del raster.

```
import gdal

# Path to a tiff file covering the globe
# http://visibleearth.nasa.gov/view.php?id=57752
tif_name = "/path_name/land_shallow_topo_21600.tif"

# Open raster in read only mode
ds = gdal.Open(tif_name, gdal.GA_ReadOnly)

# Get the first raster band
band = ds.GetRasterBand(1)

# Compute x/y resolution in degrees
resx = 360. / band.XSize
resy = 180. / band.YSize

# Define the geotransform used to convert x/y pixel to lon/lat degree
# [lon_topleft, lon_resolution, lat_skew, lat_topleft, lon_skew, lat_resolution]
geotransform = [-180, resx, 0.0, 90, 0.0, -1*resy]

# The inverse geotransform is used to convert lon/lat degrees to x/y pixel index
inv_geotransform = gdal.InvGeoTransform(geotransform)

# Define a longitude/latitude bounding box in degrees
# [lonmin, latmin, lonmax, latmax]
bbox = [-5, 40, 10, 55]

# Convert lon/lat degrees to x/y pixel for the dataset
_x0, _y0 = gdal.ApplyGeoTransform(inv_geotransform, bbox[0], bbox[1])
_x1, _y1 = gdal.ApplyGeoTransform(inv_geotransform, bbox[2], bbox[3])
x0, y0 = min(_x0, _x1), min(_y0, _y1)
x1, y1 = max(_x0, _x1), max(_y0, _y1)

# Get subset of the raster as a numpy array
data = band.ReadAsArray(int(x0), int(y0), int(x1-x0), int(y1-y0))
```



<https://riptutorial.com/it/gdal/topic/7995/leggere-i-raster-con-gdal>

Capitolo 3: Leggi un file netCDF con gdal

Examples

Leggi un file netCDF (.nc) con python gdal

Come leggere un file netCDF (.nc) con python gdal?

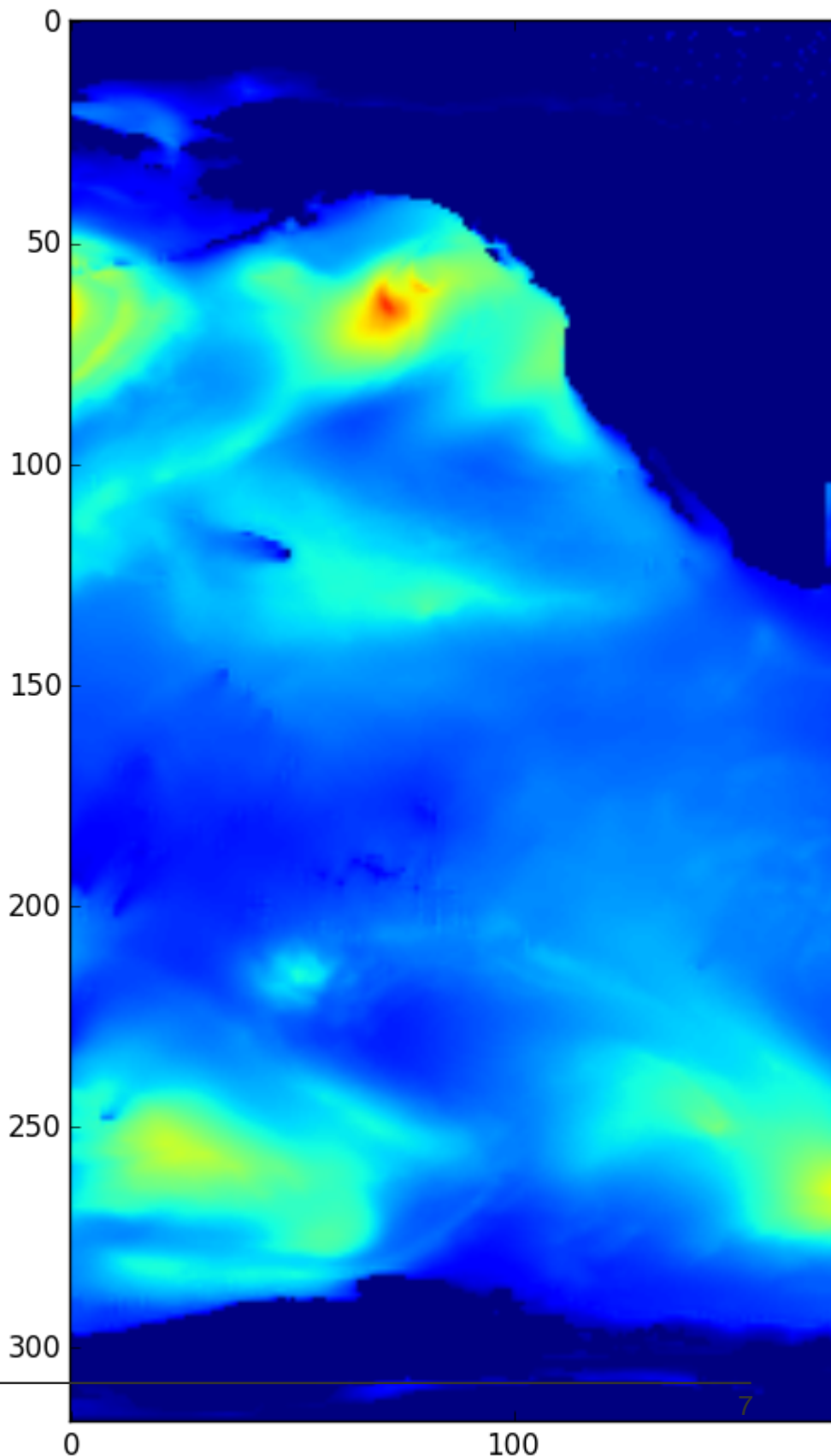
```
import gdal

# Path of netCDF file
netcdf_fname = "/filepath/PREVIMER_WW3-GLOBAL-30MIN.nc"

# Specify the layer name to read
layer_name = "hs"

# Open netcdf file.nc with gdal
ds = gdal.Open("NETCDF:{0}:{1}".format(netcdf_fname, layer_name))

# Read full data from netcdf
data = ds.ReadAsArray(0, 0, ds.RasterXSize, ds.RasterYSize)
data[data < 0] = 0
```

<https://riptutorial.com/it/gdal/topic/8003/leggi-un-file-netcdf-con-gdal>

Titoli di coda

S. No	Capitoli	Contributors
1	Iniziare con gdal	Chr , Community
2	Leggere i raster con gdal	Chr , Logan Byers
3	Leggi un file netCDF con gdal	Chr