



Summer School in InSAR, time series processing and deformation modelling



Data manipulation with QGIS

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Data manipulation with QGIS



Plan:

Pixel coordinates

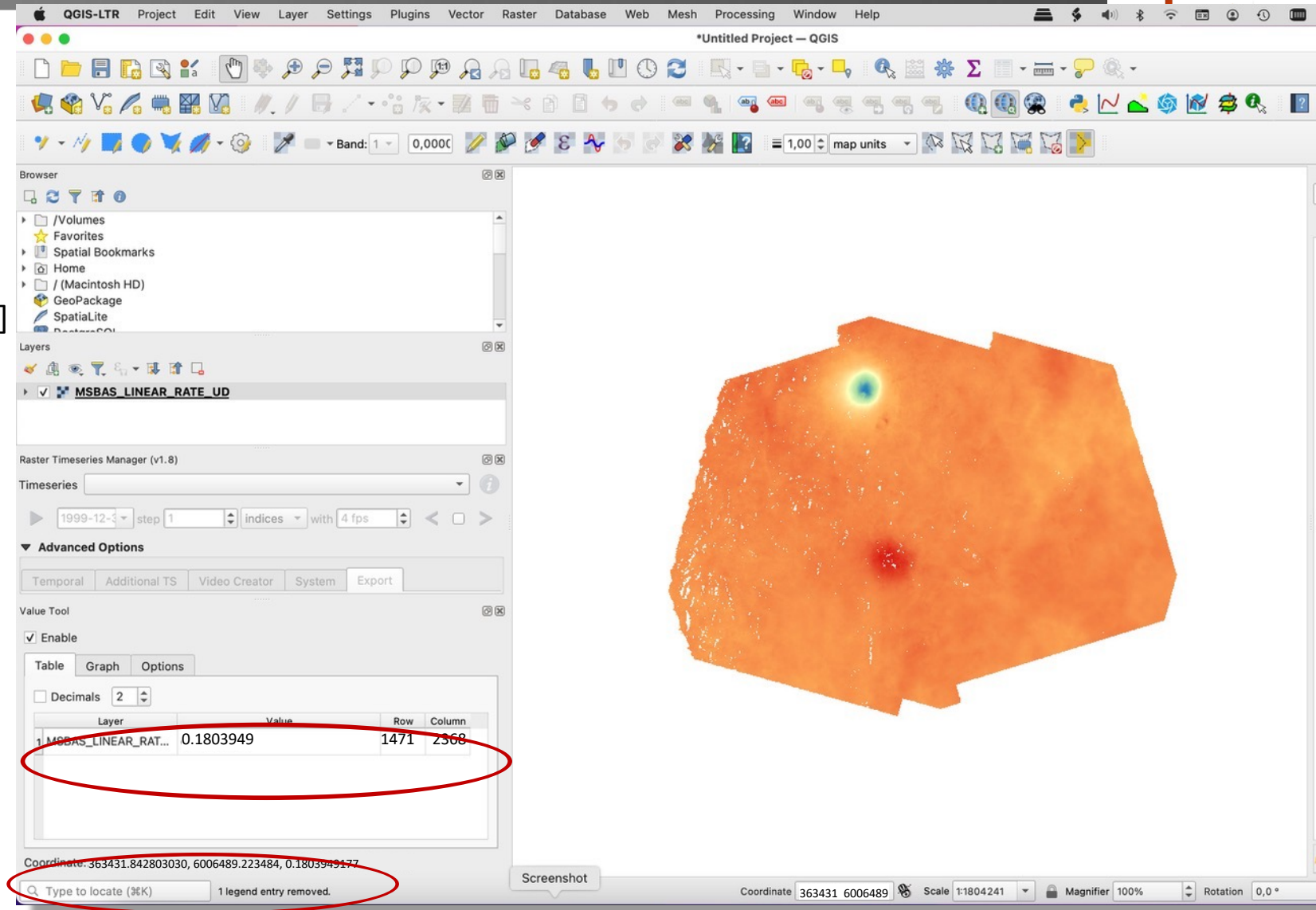
PlotTS.sh from QGIS

Rasters manipulation

Create a map of deformation masked by coherence on a Google Earth background

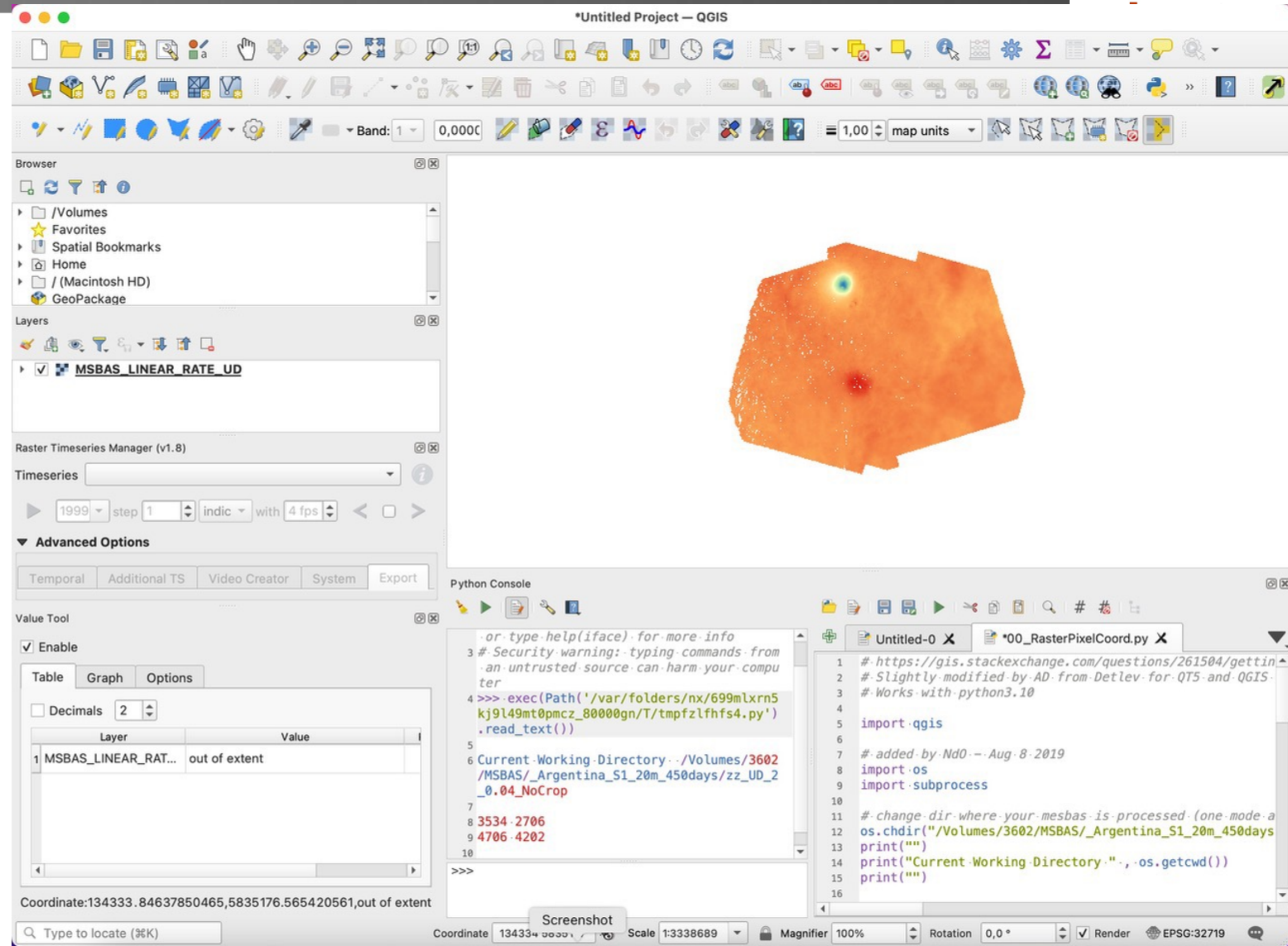
Pixel coordinates

- Drag & drop e.g. the [MSBAS_LINEAR_RATE_UD.bin](#) In QGIS
- [Double click on layer
➔ change Render type; transparency etc...]
- Value Tool plugin: watch
 - “Value”
 - “Row” & “column”
 - “UTM values”



Pixel coordinates PlotTS.sh from QGIS

- Click on Plugins > Python Console
- Open `00_RasterPixelCoord.py` (in `.../SAR/MasTerToolbox/SCRIPTS_MT/`)
- In line 12 of `00_RasterPixelCoord.py`, change path to dir where msbas defo maps are stored, e.g. `.../MSBAS/YourRegion/zz_Comp_...`
- Run it (click on ▶)
- Click on the defo map on the pixel where you want to plot the time series.
- The coordinates of the pixel appear in the Console in red, and the plot is computed in `.../MSBAS/YourRegion/zz_Comp_...`



The screenshot shows the QGIS interface with the following components:

- Browser:** Shows the file system structure, including /Volumes, Favorites, Spatial Bookmarks, Home, / (Macintosh HD), and GeoPackage.
- Layers:** The layer list shows `MSBAS_LINEAR_RATE_UD` selected.
- Raster Timeseries Manager (v1.8):** The Timeseries dropdown is set to `MSBAS_LINEAR_RATE_UD`. The step is set to 1, and the indicator is set to 4 fps.
- Value Tool:** The Value Tool is enabled. The Table tab shows the following data:

Layer	Value
MSBAS_LINEAR_RATE_UD	out of extent
- Python Console:** The console shows the execution of the `00_RasterPixelCoord.py` script. The output displays the coordinates of the selected pixel in red: `3534 2706` and `4706 4202`.



Data manipulation with QGIS



Pixel coordinates

PlotTS.sh from QGIS

Rasters manipulation

- Click on
Raster > Raster Calculator
- Perform the computation you want, e.g.
 - Create mask based on a coherence threshold
 - Multiply a defo by a mask (1 everywhere, 0 where to mask)
 - Create a differential deformation map by subtracting the deformation between two dates
(= create a deformation map even between different satellites or acquisition mode !)
 - Etc...

Plus several other classical features from GIS software: create profiles etc...



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Try it – have fun !



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- DONE ! -