

1 Instructions

This Lab uses only Google Earth, no MATLAB (you're welcome!). Save any images you import or marks you make to a `.kmz` or `.kml` file (see Exercise 2.4) and send that file to me by email (suadusum@ucsd.edu).

Google Earth is a useful way to look at remote sensing data in its geographic context. Because it is free and can be downloaded to any computer (see <http://www.google.com/earth/index.html>), Google Earth is also an easy way to share your findings with others. If you've never used Google Earth before, look at a tutorial. You may want to change the preferences to allow faster navigating. Try looking at the Rocky Mountains, the Eiffel Tower, Victoria Falls, Manhattan, and anything else interesting.

2 Exercises

2.1 Exercise 1

Find any place you have visited before (such as a tourist attraction). Find a place you would like to visit. Create a **Placemark** for each. Notice you can immediately return to these places by double clicking on the **Placemark** icon in the left panel.

2.2 Exercise 2

Download 7 files (5 `.tif` files, 1 `.kmz` file, and `ReadmeLab4`) from <http://topex.ucsd.edu/rs/lab4/>. The file `phase_11.tif` is an interferogram made by differencing two scenes from an active-source microwave swath altimeter (like the front cover of your book). It shows ground motions across the southern San Andreas Fault. Import this image into Google Earth (use **Add Image Overlay**) and position it correctly using the NSEW edges (see `ReadmeLab4` file). Adjust the transparency so that you can see both the interferogram and the Google Earth imagery. Do they line up? Are all the roads and farms in the right place? If not, adjust the location of the image in the **Properties** window.

2.3 Exercise 3

Import the four `SAF01_*` images. This is a section of high-resolution altimetry data along the San Andreas Fault. Can you see the fault in the altimetry? In the interferogram? In the Google Earth imagery? Open the `Painted Canyon kmz` file. These are benchmarks whose locations are regularly measured using GPS. Can you see where they cross the fault? Remember, Google Earth is most useful for looking at multiple data sets in context.

2.4 Exercise 4

To save your work, create a new folder in the **Places** left panel. Put any **Placemarks** or **Images** you have created or imported into this folder. Right click on the folder and choose **Save As**. Default is a `kmz` (binary) file format, or you may choose a `kml` (ascii) format. Send this file to me (suadusum@ucsd.edu).