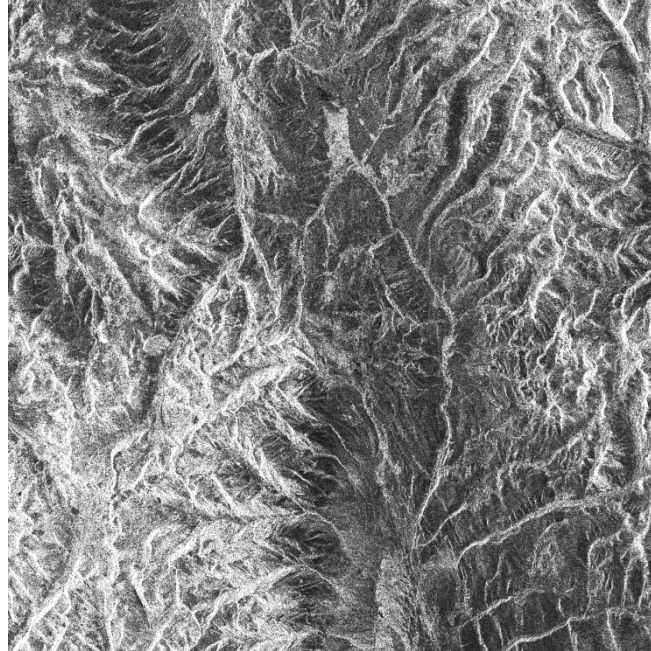


Questions

A. The following figure is the SAR intensity of the master image in this lab. Please specify the along track (azimuth) direction and the range direction and discuss the reason (4 marks). *Hint: This image is in slant-range (radar) coordinate where the upper left corner is the origin (0,0).*



Answer :

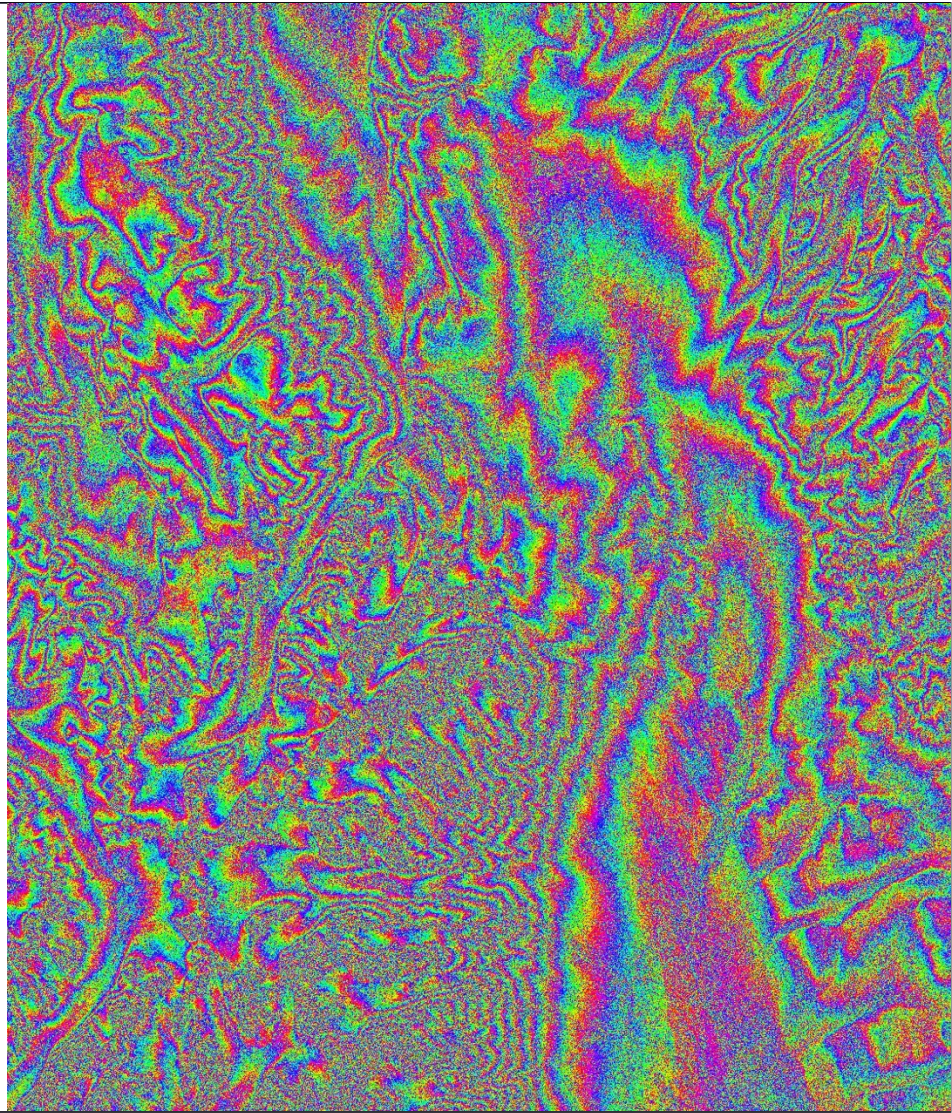
As is shown in the picture , the along track (azimuth) direction is from the upper left corner (0,0) to the lower left corner. The range direction is from the from the upper left corner(0, 0) to the upper right corner. Because it flies towards the satellite.

B. During the exercise, three types of products are generated: raw interferogram, flattened interferogram and differential interferogram. Please paste the corresponding image exported from the PhaseViewer in the table below (3 marks).

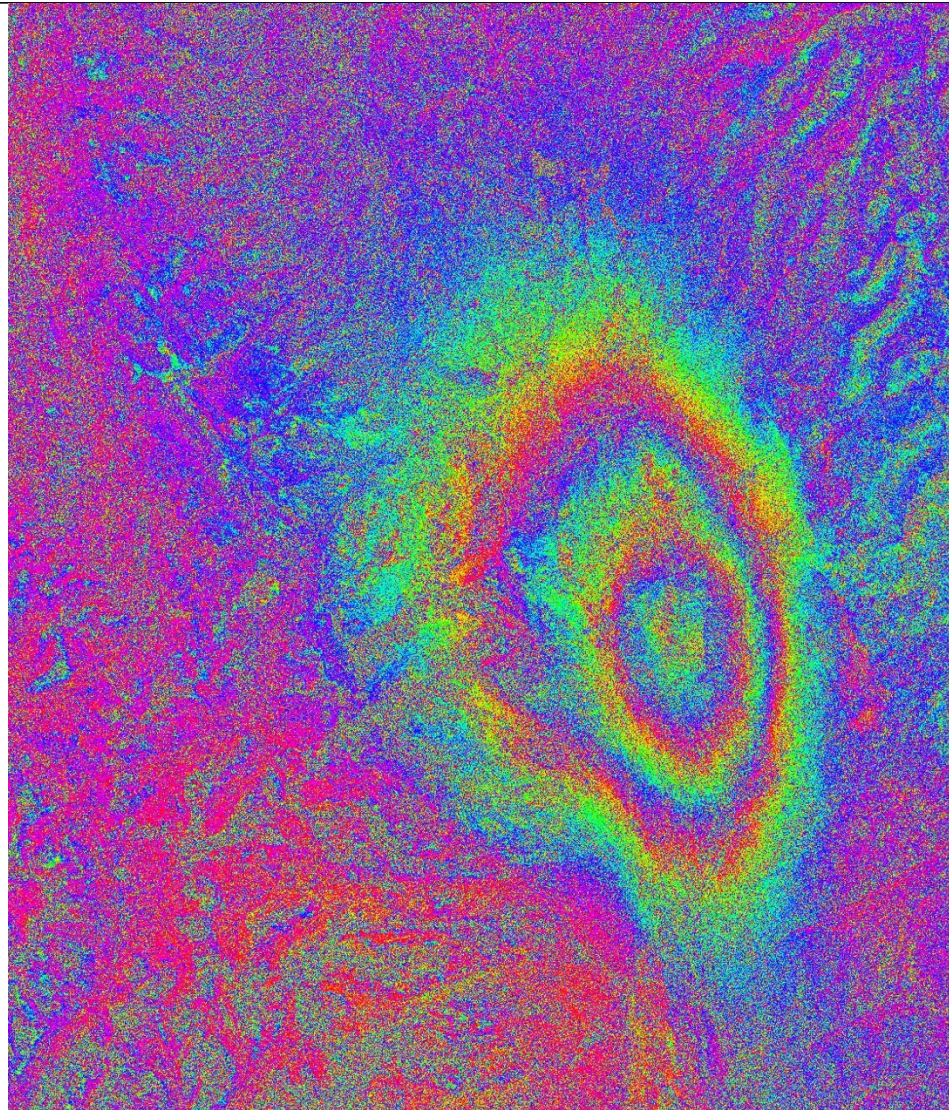
Raw
Interferogr
am



Flattened
Interferogr
am



Differential
Interferogram



C. In this lab demo, the simulated topographic phase was obtained using SRTM DEM. The resolution of the SRTM is approximately 90 metres. The PALSAR images used in this lab were acquired in Fine Beam Single polarisation (FBS) mode. In general, the resolution of a FBS PALSAR is around 10 metres. Observe the differential interferogram carefully. Apart from the phase components due to de-correlation, atmospheric disturbances and orbital error, is there any other phase component which may contaminate the DInSAR measurement? Is it possible to further improve the DInSAR result, and if so, how? (3 marks)

Answer:

Yes, there will be some other reasons for contaminate DInSAR measurement.

1. The influence of weather, temperature and climate
2. Effect of noise
3. The effect of GPS estimation.

In order to further improve the DInSAR result, it is possible to choose to reduce errors due to the atmosphere, such as selecting a better weather and reducing the influence of noise. Secondly, the accuracy of the measurement can be improved.

