

Lab 7 DEMs and Lidar**Name:**

Upload the following files to the instructor:

(4) "YourName_color-coded_25K_DSM" .jpg

(4) "YourName_DSM_Perspective_View"

(9) "LastName_Viewshed" Powerpoint, jpg, or other format.

Question 1: A. In which direction is the radar beam pointing (N, S, E, or W)?

B. Why does the river south of Fairbanks have a very dark tone?

Question 2: What is the minimum elevation of this DSM?

Question 3: What natural and man-made features are generating the surface on the DSM? (Hint: Turn off all layers in the Layer Manager except the hillshade DSM and the ORI radar image. Turn the top layer on & off to identify features.)

Question 4: A. what is the DTM and DSM elevation at the airport runway?

B. What is the elevation of the DTM and DSM about 3.5 km NW of the airport runway, along the crest of the ridge?

C. What causes the DSM and DTM to have different elevations along the crest of the ridge about 3.5 km NW of the airport runway?

D. Why was one radar wavelength used primarily for the DSM and the other radar wavelength used to generate the DTM?

Question 5: A. What is the minimum and maximum elevation (Z) in the DSM?

Question 6: A. What is the minimum and maximum elevation (Z) in the DTM?

B. How many lidar points are in this DTM data set?
(NUM_POINT_RECORDS)

Question 7: A. Why do the trees have elongated, near-vertical sides around the extent of the tree canopy?

B. What do the red dots at the top of the canopy represent?

Question 8: What features do you see on the DSM cross section as you traverse the model? (refer to the orthophotograph in the ENVI window that we opened first)

Question 9: What is the height (in feet) of the tallest tree that you measure?

Question 10. What are you simulating by raising the minimum height on the DTM?