

Exercise 1

Introduction to matlab for the visualization and processing of numerical datasets

1. Download the files from the Exercise (TISS)
2. Following the instructions during the Exercise, prepare histograms of the data provided
 - a. Use linear and log10 scales for the data
 - b. Add labels to the plots!
 - c. What can you conclude from such plots?
3. Following the instructions during the exercise, prepare scatter plots of the data for:
 - a. The spatial distribution of the measurements
 - b. Bottom vs. Top Measurements
 - c. Scatter 2D plot with the position of pixels given by the latitude/longitude of the measurements and a code-color for the values of the readings.
 - i. For the bottom measurements
 - ii. Measurements removing readings below or equal to 0.
 - d. Based on your modifications of the routine, please provide:
 - i. plots for the top measurements
 - ii. For gradient measurements (difference)
 - e. From the plots performed before, what can you conclude from the data? Any suggestion for the visualization of the readings that could help in the delimitation of properties in the subsurface? E.g., logarithm scales? Normalization?
4. Provide the code lines required to obtain the gradient values measured along profiles with a West – East orientation, i.e., horizontal lines.
 - a. What could you conclude from the signal observed in such lines?
 - b. If the East-West profiles were not extracted, then provide your conclusions for the interpretation of structures observed from West-East areas of the plots.