



VISUALIZE ELEVATION DATA WITH ERDAS IMAGINE IMAGE CHAIN eTRAINING

Introduction

Demonstrates how to use the relief mode to visualize and interpret the elevation data using the ERDAS IMAGINE Image Chain.

Software

- ERDAS IMAGINE

Data

- w106n39.img – Digital Elevation Model (DEM)

Transcript

0:09

Welcome to Hexagon Geospatial eTraining. Our topic: Flexible ways to visualize a digital elevation model using the ERDAS IMAGINE Image Chain.

In this module, we will look at the relief mode and see how it can be used to help interpret elevation or other surface type information.

1. Begin with a DEM displayed in the Viewer using a standard grayscale display.

Using this display mode, you see elevation represented with various shades of gray.

- Higher elevation will be lighter in color
- Lower elevation will be darker

You can use the Image Chain to further enhance this data, making it easier to extract and interpret information.

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Rather than using the Spatial Modeler to preview the data, you will open the data directly using the Image Chain.

2. Click the **File** tab and select **Open > Raster as Image Chain**.
3. From the **File Chooser**, select the elevation data you want to visualize and click **OK**.

Since this image has header information that identifies the data as elevation, the Image Chain defaults to the relief mode with a sun angle shaded representation of the elevation information. This representation is already easier to interpret than the original grayscale rendering of the data height values. For example, fine detail in the valleys is easier to see.

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On the preview **Relief** tab, you can control the sun angle, the vertical exaggeration, and other parameters of the relief shading effect.

On the sun **Shading** tool, the small circle represents the sun, N defines the direction, and the rings define the height off the horizon. The outer rings are closer to the horizon, while the center places the sun more directly overhead.

You can also modify the vertical exaggeration. Using the arrows next to the **Scale** value, you can increase and decrease the scale.

2:03

If you zoom out to the full extent of this data set, it's easy to see one of the shortcomings of the plain relief shading representation. Relief shading highlights local changes in relief very effectively, but overall trends are normalized out. For example, it is hard to tell if the area to the northeast is at a similar altitude to the area at the southwest. Both show lots of local detail, but the relative difference in altitude is lost through the relief shading effect.

4. To regain this information, you can turn on the **Use Color** option in the preview **Relief** tab.

This forms a merge of the relief shading with the original elevation values. You immediately regain the ability to see the overall difference in elevation.

However, detail has been lost in the northeast corner where elevations are lower; here the grayscale information is darker with little contrast.

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You can adjust the image parameters in real time to bring out the detail by shifting from a grayscale merge to using a color ramp of the elevation data.

5. To do this, click the **Color Table** button to bring up the gallery of the predefined color ramps.

Hovering the mouse over a color ramp chip in the gallery will preview the effects of that ramp in the **2D View**.

6. Move the mouse around until you find a ramp which provides the desired effect, such as the aptly named **Elevation** ramp.
7. Click on the chip to apply it.

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You now have the results of the flexible Image Chain for displaying surface based data. The shaded relief displays fine detail, while the overall differences in elevation are still retained through the color ramp.

Since you have used the Image Chain, you can still manipulate its display parameters, such as the sun illumination angle, in real time and pan, or zoom and rotate the data.

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Thank you for watching this eTraining module from Hexagon Geospatial. For more eTraining, visit hexagongeospatial.com/eTraining.