GEOCODER™ Statistics

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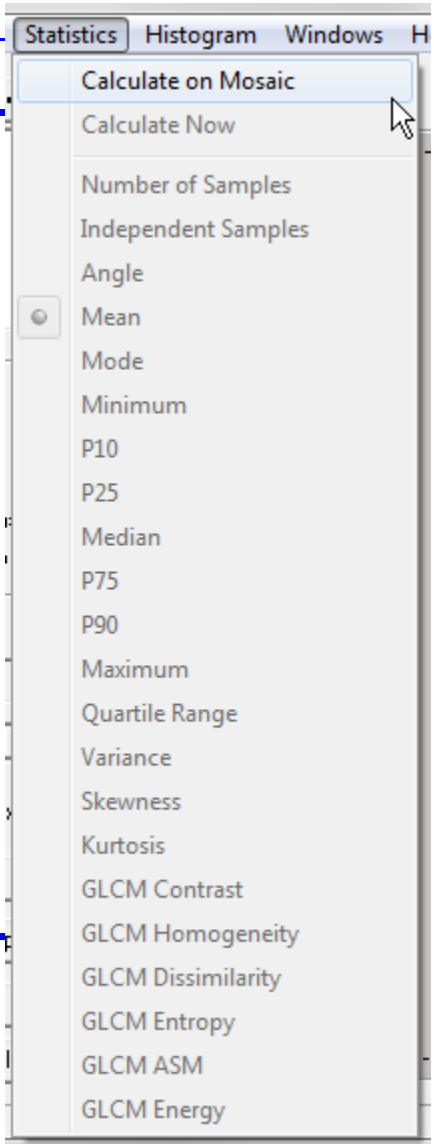
Welcome back to yet another article in the seemingly neverending series on GEOCODER™. This time I want to introduce an upcoming addition to the program: statistics.

When HYPACK® licensed the program from UNH, these features were disabled to focus development on other areas. Now we are restoring this powerful feature set to generate statistics from the backscatter.

FIGURE 1. *Statistics Menu in GEOCODER™*



CALCULATING STATISTICS

Statistics calculation works similarly to the ARA functions. In the new statistics menu, you can check "Calculate on Mosaic" then make the mosaic as you normally would. During the mosaicking process, 22 different statistics will be calculated for each bin. (Bin size is a configurable option.) If the mosaic has already been made, the "Calculate Now" option will allow you to calculate only statistics without regenerating the entire mosaic.

We can calculate and display: mean, mode, range, minimum, maximum, standard deviation, variance, quartile range, skewness, kurtosis, 10% 25% 75% 90% percentiles, and number of samples per bin. Additionally, GEOCODER™ can calculate gray level co-occurence matrices (GLCM) and several matrix properties including: contrast, homogeneity, dissimilarity, entropy, energy, and angular second moment (ASM).

These features can be used simultaneously with ARA and are intended to be used as an aid in interpreting the ARA inversion results.

DISPLAYING STATISTICS

Like the ARA displays, the statistics cells can be displayed alone, as an overlay of the backscatter mosaic, or overlaying the bathymetry using the View menu. Figure 2 shows an example of the mean displayed in each mode respectively. You can toggle between the various statistics using the Statistics menu.

FIGURE 2. *Displaying GEOCODER™ Statistics*