ABSOLUTE VERSUS RELATIVE CONSIDERATIONS

If spatial data are defined as the distance between endpoints of a line (either straight or curved) then;

- **Coordinates are considered as <u>absolute</u> spatial data with respect to a defined underlying system.**

- **<u>Relative</u> spatial data are taken to be component differences between coordinates defined in the same system.**

In previous seminars it was claimed that WGS84 and GRS80 were interchangeable with respect to using GPS data and the NAD83. That is true when working with relative data such as the ΔX/ΔY/ΔZ components of a GPS vector. It may also be true when working with point position code phase data having standard deviations greater than about 1 meter. But, the following should be noted:

- **The NAVSTAR satellites orbit earth's physical center of mass.**

- **Coordinates of the CORS stations are computed with respect to earth's center of mass, not NAD83.**

- **The location of the earth's physical center of mass is known better now than when "fixed" with publication of the NAD83.**

- **Coordinates generated by converting NAD83 latitude/longitude/ height values to geocentric values are not strictly compatible with WGS84 values. Differences, especially in the height component, up to a meter may be encountered.**

See "Do You Really Have WGS84 Coordinates?" by William Strange, Professional Surveyor, Vol. 20, No.9, October, 2000.

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