Portions of "README" File - VERTCON 2.0

README file   18-aug-94   RJF/dgm

PURPOSE: Program VERTCON computes the modeled difference in orthometric
            height between the North American Vertical Datum of 1988 (NAVD 88)
            and the National Geodetic Vertical Datum of 1929 (NGVD 29) for a
            given location specified by latitude and longitude.
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How program VERTCON works:
   The software and three files of datum transformation grids for the
conterminous United States (CONUS) are provided on the diskettes. VERTCON
returns the orthometric height difference between NAVD 88 and NGVD 29 at the
geodetic position specified by the user. VERTCON interpolates the datum
transformation at a point from the appropriate grid in your subdirectory.
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Data Input:
   The user can key in latitude and longitude on a point-by-point basis or can
create an input file using a text editor. Several file formats are provided,
including the internal bench mark file record format of the Vertical Network
Branch, NGS. These formats are detailed in a "Help" menu option which appears
when the input filename is specified.
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Data Output:
   Results are collected into an output file. The default name of this file is
VERTCON.OUT, but the user can choose any legal filename. (A word of advice:
don't use misleading extensions such as .EXE, .BAT, etc.). The format
of the output file is linked to the format of the input file to maintain
consistency.

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   The grids contain a model of (NAVD 88 - NGVD 29) height differences.

   If a NAVD 88 height is desired when a NGVD 29 height is given,
       ADD the model value ALGEBRAICALLY to the NGVD 29 height.

   If a NGVD 29 height is desired when a NAVD 88 height is given,
       SUBTRACT the model value ALGEBRAICALLY from the NAVD 88 height.

The VERTCON 2.0 Model
   The VERTCON 2.0 model was computed on May 5, 1994 using 381,833 datum
difference values. A key part of the computation procedure was the
development of the predictable, physical components of the differences
between the NAVD 88 and NGVD 29 datums. This included models of refraction
effects on geodetic leveling, and gravity and elevation influences on the
new NAVD 88 datum. Tests of the predictive capability of the physical
model show a 2.0 cm RMS agreement at our 381,833 data points. For this
reason, the VERTCON 2.0 model can be considered accurate at the 2 cm
(one sigma) level. Since 381,833 data values were used to develop the
corrections to the physical model, VERTCON 2.0 will display even better
overall accuracy than that displayed by the uncorrected physical model. This
higher accuracy will be particularly noticable in the eastern United States.
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