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ABSTRACTS

Aspects of Intra-Frame Velocity (Deformation) Models for the U.S. N.S.R.S. in 2022

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Abstract

The National Oceanic and Atmospheric Administration's (NOAA) National Geodetic Survey (NGS) will be updating the National Spatial Reference System (NSRS) for the United States in 2022. Four Terrestrial Reference Frames (TRF's) will be defined based on the available ITRF in 2020. Euler Pole Parameters (EPP) will be determined for each frame to capture most of the horizontal plate motion. An Intra-Frame Velocity Model (IFVM) is required to account for any residual horizontal and all vertical motion within these frames. These are essentially deformation models but can be extended across the plate boundaries for practical purposes. Hence, the use of Intra-Frame instead of Intra-Plate. This paper will cover significant aspects of the IFVM that rely on increasingly sophisticated (and complicated) techniques for capturing the motion within each TRF. Simply gridding the National CORS network is the easiest and least accurate approach. The most complicated and potentially most accurate would be the use of InSAR. NGS must select the most cost-effective and accurate mechanism within the next few years to have the IFVM in place by 2022.