

CGU_G_03: Further Evolution of North American Reference Frames

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Session Description

The North American Datum of 1983 (NAD83), the nationally adopted reference frame in both Canada and the United States, is presently defined by a mathematical transformation from ITRF. The latest version of NAD83 is based on a transformation from ITRF2014 and coordinates in this frame will soon be adopted by the national geodetic agencies in Canada and the United States. In 2022, NAD83 will be succeeded by a set of modern regional reference frames using the latest realization of ITRF that is fixed separately to the North American, Caribbean, Marianas and Pacific tectonic plates. Although the U.S. will officially adopted the new reference frames in 2022, Canada will not do so right away. Significant scientific and practical challenges still remain in the realization of these regional reference frames. Papers are invited that address the development, implementation and maintenance of such frames, including: (1) the densification of the ITRF reference frame in North America and the promotion of its use; (2) the definition, maintenance and future evolution of plate-fixed regional reference frames for North America, including NAD83 and the new ITRF-based regional reference frames in 2022; (3) the effects and modeling of crustal motions, including post-glacial rebound and tectonic motions along the plate boundaries along the western coast of North America and in the Caribbean; and (4) standards for the accuracy of geodetic positioning.

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Joint Session Submission: none