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Autore	Freymueller Jeffrey T
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Nota di contenuto	Part I: Reference Systems and Frames -- Towards an International Height Reference Frame Using Clock Networks -- Towards the realization of the International Height Reference Frame (IHRF) in Argentina -- Comparing Vienna CRF solutions to Gaia-CRF2 -- Co-Location of Space Geodetic Techniques: Studies on Intra-Technique Short Baselines -- Status of IGS Reprocessing Activities at GFZ -- A Wavelet-based Outlier Detection and Noise Component Analysis for GNSS Position Time Series -- Part II: Gravity field modelling -- International Combination Service for Time-variable Gravity Fields (COST-G) – Start of operational phase and future perspectives -- LUH-GRACE2018: a new time series of monthly gravity field solutions from GRACE -- A Precise Geoid Model for Africa: AFRgeo2019 -- Part III: Earth rotation and geodynamics -- A first assessment of the corrections for the consistency of the IAU2000 and IAU2006 precession-nutation models -- Report of the IAU/IAG Joint Working Group on Theory of Earth rotation andvalidation -- Achievements of the first 4 years of the International Geodynamics and Earth Tide Service (IGETS) 2015 – 2019 -- Inter-comparison of ground gravity and

vertical height measurements at collocated IGETS stations -- Part IV: Multi-Signal Positioning, Remote Sensing and Applications -- A Benchmarking Measurement Campaign to Support Ubiquitous Localization in GNSS Denied and Indoor Environments -- A method to correct the raw Doppler observations for GNSS velocity determination -- Assessment of a GNSS/INS/Wi-Fi Tight-Integration Method Using Support Vector Machine and Extended Kalman Filter -- Enhancing navigation in difficult environments with low-cost, dual-frequency GNSS PPP and MEMS IMU -- Part V: Monitoring and Understanding the Dynamic Earth with Geodetic Observations -- Water Depletion and Land Subsidence in Iran using Gravity, GNSS, InSAR and Precise Levelling Data -- Past and future sea level changes and land uplift in the Baltic Sea seen by geodetic observations -- Estimation ofLesser Antilles vertical velocity fields using a GNSS-PPP software comparison -- Time variations of the vertical component in Japanese GEONET GNSS sites -- An approximate method to simulate post-seismic deformations in a realistic Earth model -- Geodetic monitoring of the variable surface 1 deformation in Latin America -- Progress in GTEWS ground displacement measurements and tsunami warning -- Part VI: Geodesy for Atmospheric and Hydrospheric Climate Research (IAG, IAMAS, IACS, IAPSO) -- Characterization of the Upper Atmosphere from Neutral and Electron Density Observations -- Tropospheric products from high-level GNSS processing in Latin America -- Can vertical GPS displacements serve as proxies for climate variability in North America? -- Tracking Hurricanes using GPS atmospheric precipitable water vapor field -- Continuous monitoring with a superconducting gravimeter as a proxy for water storage changes in a mountain catchment -- Least-Squares Spectral and Coherency Analysis of the Zenith Total Delay Time Series at SuomiNet Station SA56 (UNB2).

Sommario/riassunto

This open access book contains 30 peer-reviewed papers based on presentations at the 27th General Assembly of the International Union of Geodesy and Geophysics (IUGG). The meeting was held from July 8 to 18, 2019 in Montreal, Canada, with the theme being the celebration of the centennial of the establishment of the IUGG. The centennial was also a good opportunity to look forward to the next century, as reflected in the title of this volume. The papers in this volume represent a cross-section of present activity in geodesy, and highlight the future directions in the field as we begin the second century of the IUGG. During the meeting, the International Association of Geodesy (IAG) organized one Union Symposium, 6 IAG Symposia, 7 Joint Symposia with other associations, and 20 business meetings. In addition, IAG co-sponsored 8 Union Symposia and 15 Joint Symposia. In total, 3952 participants registered, 437 of them with IAG priority. In total, there were 234 symposia and 18 Workshops with 4580 presentations, of which 469 were in IAG-associated symposia. .