Dr. Guoquan Wang

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EDUCATION

07/1998—06/2001: Ph.D. in Solid Earth Geophysics, Institute of Geology, China Earthquake Administration, Beijing, China.

07/1996—06/1998: M.S. in Hydrogeology and Engineering Geology, Nanjing University, Nanjing, China.

08/1992—06/1996: B.S. in Geology, China University of Geosciences, Wuhan, China.

PROFESSIONAL EXPERIENCE

09/2018----Present: Professor, Department of Earth and Atmospheric Sciences, University of Houston, Texas, USA.

09/2014----08/2018: Associate Professor, Department of Earth and Atmospheric Sciences, University of Houston, Texas, USA.

09/2011----08/2014: Assistant Professor, Department of Earth and Atmospheric Sciences, University of Houston, Texas, USA.

07/2011—08/2011: Associate Professor, Department of Geology, University of Puerto Rico at Mayaguez, Puerto Rico, USA.

08/2006—06/2011: Assistant Professor, Department of Geology, University of Puerto Rico at Mayaguez, Puerto Rico, USA.

MAJOR AWARDS

NSF CAREER (2009)

University of Houston Teaching Excellence Award for Group Teaching (2019)

RESEARCH INTERESTS

(1) Coastal hazards (e.g., sea-level change, faulting, subsidence, wetland loss) along the Gulf Coast area
(2) Caribbean neotectonics
(3) GPS seismology, strong earthquake ground motion
(4) Applications of GPS and LIDAR technologies in natural hazards studies
(5) Geological hazard risk analysis and mitigation
(6) Structural health monitoring
(7) Numerical modeling---Numerical 3D simulation (e.g., Parallel Super-Computer Numerical Simulation, MPI and Finite Difference Method)

MAJOR REPRESENTATIVE PEER-REVIEWED JOURNAL PUBLICATIONS

(*denotes graduate student/postdoc under my primary supervision. All publications can be downloaded from my ResearchGate Profile)

(1) Zhao R., **Wang G.**, Yu X., Sun X., Bao Y., Xiao G., Gan W., and Shen S. (2020). Rapid Land Subsidence in Tianjin, China Derived from Continuous GPS Observations (2010–2019), ***Proc.* IAHS-*the International Association of Hydrological Sciences***, 97, 2020 https://doi.org/10.5194/piahs-97-1-2020

(2) Agudelo***** G., **Wang G.**, Liu Y., Bao Y., and Turco M.J. (2020). GPS geodetic infrastructure for subsidence and fault monitoring in Houston, Texas, USA. ***Proc. IAHS-the International Association of Hydrological Sciences***, 97, 2020 https://doi.org/10.5194/piahs-97-1-2020

(3) **Wang G.**, Zhou X., Wang K., Ke X., Zhang Y., Zhao R., and Bao Y. (2020). GOM20: A Stable Geodetic Reference Frame for Subsidence, Faulting, and Sea-Level Rise Studies along the Coast of the Gulf of Mexico, ***Remote Sensing*** 12 (3), 350.

(4) Xiong***** L., **Wang G.**, Bao Y., Zhou X., Wang K., Liu H., Sun X., and Zhao R. (2019). A Rapid Terrestrial Laser Scanning Method for Coastal Erosion Studies: A Case Study at Freeport, Texas, USA, ***Sensors*** 19 (15), 3252.

(5) Guo* W., **Wang G.**, Bao Y., Li P., Zhang M., Gong Q., Li R., Gao Y., and Zhao R. (2019). Detection and Monitoring of Tunneling-Induced Riverbed Deformation Using GPS and BeiDou: A Case Study. ***Applied Sciences*** 9 (13), 2759

(6) Liu* Y., Sun X., **Wang G.**, Turco M.J., Agudelo G., Bao Y., Zhao R., and Shen S. (2019). Current Activity of the Long Point Fault in Houston, Texas Constrained by Continuous GPS Measurements (2013–2018), ***Remote Sensing*** 11 (10), 1213

(7) **Wang G.**, Liu H., Mattioli G., Miller M., Feaux K., Braun J. (2019). CARIB18: A Stable Geodetic Reference Frame for Geological Hazard Monitoring in the Caribbean Region. ***Remote Sens.*** 2019, 11, 1-35.

(8) Kearns* T. J., **Wang G.**, Turco M., Welch J., and Tsibanos V. (2019). Houston16: A stable geodetic reference frame for subsidence and faulting study in the Houston metropolitan area, Texas, U.S. ***Geodesy &Geodynamics***, 10(5), 382-393, doi:10.1016/j.geog.2018.05.005

(9) Xiong* L., Wang G., Bao Y., Zhou X., Sun X., Zhao R. (2018). Detectability of Repeated Airborne Laser Scanning for Mountain Landslide Monitoring. ***Geosciences*** **2018**, **8**(12), 469, https://doi.org/10.3390/geosciences8120469

(10) **Wang G.**, Bao Y., Gan W., Geng J., Xiao G., and Shen J. S. (2018). NChina16: A stable geodetic reference frame for geological hazard studies in North China. Journal of Geodynamics. 115(2018), 10-22, doi:10.1016/j.jog.2018.01.003

(11) Bao* Y., Guo W., **Wang G**., Gan W., Zhang M., and Shen J. S. (2018). Millimeter-Accuracy Structural Deformation Monitoring Using Stand-Alone GPS: Case Study in Beijing, China. ***J. Surv. Eng*.** 144(1), 05017007, doi:10.1061/(ASCE)SU.1943-5428.0000242

(12) **Wang G**., Turco M., Soler T., Kearns T., and Welch, J. (2017). Comparisons of OPUS and PPP solutions for subsidence monitoring in the greater Houston area. ***J. Surv. Eng*.** 143(4), 05017005, doi:10.1061/(ASCE)SU.1943-5428.0000241

(13) Zhou* X., **Wang G.**, Bao Y., Xiong L., Guzman V., and Kearns T. J. (2017). Delineating Beach and Dune Morphology from Massive Terrestrial Laser Scanning Data Using the Generic Mapping Tools, ***J. Surv. Eng*.**, 143(4), 04017008, doi: 10.1061/(ASCE)SU.1943-5428.0000223

(14) Xiong* L., **Wang G.**, and Wessel P. (2017). Anti-aliasing filtering for deriving high-accuracy DEMs from TLS data: case study at Freeport, Texas, ***Computers & Geosciences,*** 100, 125-134**.** doi:10.1016/j.cageo.2016.11.006

(15) Yu* J., and **Wang G.** (2017). Introduction to the GNSS Geodetic Infrastructure in the Gulf of Mexico Region. ***Survey Review***, 352(49), 51-65, doi:10.1080/00396265.2015.1108069.

(16) Lyu H., Wang G., Shen J. S., Lu L., and **Wang G.** (2016). Analysis and GIS mapping of flooding hazards on 10 May 2016, Guangzhou, China. ***Water***, 447(8), doi:10.3390/w8100447

(17) Yang* L., **Wang G.**, Huerfano V., von Hillebrandt-Andrade C. G., Martínez-Cruzado J. A., and Liu H. (2016). GPS Geodetic Infrastructure for Natural Hazards Study in the Puerto Rico and Virgin Islands Region, ***Natural Hazards***, 83(1), 641-665, doi:10.1007/s11069-016-2344-7.

(18) Soler T., and **Wang G.** (2016). Interpreting OPUS-Static Results Accurately, ***J. Surv. Eng*.**, 142(4), 05016003, doi:10.1061/(ASCE)SU.1943- 5428.0000191.

(19) Yu* J., and **Wang G.** (2016). GPS derived ground motions (2005–2014) within the Gulf of Mexico region referred to a stable Gulf of Mexico reference frame. ***Natural Hazards and Earth System Sciences***, 16(7), 1583-1602, doi:10.5194/nhess-16-1583-2016.

(20) Yang* L, **Wang G.**, Bao Y., Kearns T. J., and Yu J. (2016). Comparisons of Ground-Based and Building-Based CORS: a Case Study in the Puerto Rico and Virgin Islands Region. ***J. Surv. Eng*.**, 142(3), 05015006, doi: 10.1061/(ASCE)SU.1943-5428.0000155.

(21) **Wang G**., Welch J., Kearns T. J., Yang L., and Serna J. (2015). Introduction to GPS geodetic infrastructure for land subsidence monitoring in Houston, Texas, U.S.A. The proceeding of the Ninth International Symposium on Land Subsidence, Nov. 15-19, 2015, Nagoya, Japan. Proc. IAHS, 92, 1–7, 2015, doi:10.5194/piahs-92-1-2015

(22) Liu* H., and **Wang G.** (2015). Delineating relative motion between St. Croix and the Puerto Rico-Virgin Islands block using continuous GPS observations (1995-2014). ***International Journal of Geophysics***, 915753:1-9, doi: 10.1155/2015/915753

(23) **Wang G**., Bao Y., Cuddus Y., Jia X., Serna J. J., and Jing Q. (2015). A methodology to derive precise landslide displacements from GPS observations in tectonically active and cold regions: A case study in Alaska. ***Natural Hazards***, 77:1939-1961, doi: 10.1007/s11069-015-1684-z

(24) Kearns* T. J., **Wang G.**, Bao Y., Jiang J., and Lee D. (2015). Current Land Subsidence and Groundwater Level Changes in the Houston Metropolitan Area, Texas (2005-2012), ***J. Surv. Eng***., 141(4), 05015002:1-16, doi: 10.1061/(ASCE)SU.1943-5428.0000147

(25) Antuna J. C., M. Miller, G. Mattioli, K. Feaux, R. Anthes, J. Braun, **G. Wang**, and A. Robock (2014). Partnering with Cuba: Weather extremes, ***Science,*** *Vol. 345, ISSUE6194, 278.*

(26) Yu* J., **Wang G**., Kearns T. J., and Yang L. (2014). Is there deep-seated subsidence in the Houston-Galveston area? ***Int. J. Geophys***., 942834, 1-11, doi:10.1155/2014/942834

(27) **Wang G.**, and T. Soler (2014). Measuring Land Subsidence Using GPS: Ellipsoid Height vs. Orthometric Height, ***J. Surv. Eng***., 141(2), 05014004, doi:10.1061/(ASCE)SU.1943-5428.0000137

(28) **Wang G.**, J. Yu, T. J. Kearns, and J. Ortega (2014). Assessing the accuracy of long-term subsidence derived from borehole extensometer data using GPS observations: case study in Houston, Texas, ***J. Surv. Eng.***, DOI: 10.1061/(ASCE)SU.1943-5428.0000133

(29) **Wang G.**, T. J. Kearns, J. Yu, and G. Saenz (2014). A Stable Reference Frame for Landslide Monitoring Using GPS in the Puerto Rico and Virgin Islands Region, ***Landslides,*** *11(1):119-129,* doi:10.1007/s10346-013-0428-y

(30) **Wang G.**, J. Yu, J. Ortega, G. Saenz, T. Burrough, and R. Neill (2013). A Stable Reference Frame for Ground Deformation Study in the Houston Metropolitan Area,

Texas, ***Journal of Geodetic Science***, 3(3), 188-202. doi:10.2478/jogs-2013-0021

(31) **Wang G.**, T. Soler (2013). Using OPUS for Measuring Vertical Displacements in Houston, TX, ***J. Surv. Eng.***, 139(3), 126-134, DOI: 10.1061/(ASCE)SU.1943-5428.0000103

(32) **Wang G.** (2013). Millimeter-Accuracy GPS Landslide Monitoring Using Precise Point Positioning with Single Receiver Phase Ambiguity Resolution: A Case Study in Puerto Rico, ***Journal of Geodetic Science***, 3(1), 22-31.

(33) **Wang G.**, J. Joyce, D. Phillips, R. Shrestha, and W. Carter (2013), Delineating and Defining the Boundaries of an Active Landslide in the Rainforest of Puerto Rico Using a Combination of Airborne and Terrestrial LIDAR Data, ***Landslides***, 10(4):503-513, DOI:10.1007/s10346-013-0400-x.

(34) **Wang G.** (2013), Teaching High-Precision GPS to Undergraduates Using Online Processing Services, ***Journal of Geoscience Education,*** 61 (2), 202-212.

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(37) **Wang G.**, and T. Soler (2012). OPUS for Horizontal Subcentimeter-Accuracy Landslide Monitoring: A Case Study in the Puerto Rico and Virgin Islands Region, ***J. Surv. Eng.***, 138(3):135-143, doi:10.1061/(ASCE)SU.1943-5428.0000079.

(38) **Wang G.**, F. Blume, C. Meertens, P. Ibanez, and M. Schulze (2012). Performance of high-rate kinematic GPS during strong shaking: observations from shake table tests and the 2010 Chile earthquake (M 8.8), ***Journal of Geodetic Sciences***, 2(1):1-16, doi:10.2478/v10156-011-0020-0.

(39) **Wang G.** (2012), Kinematics of the Cerca del Cielo, Puerto Rico landslide derived from GPS observations, ***Landslides***, 9 (1):117-130, doi: 10.1007/s10346-011-0277-5.

(40) **Wang G.** (2011), GPS Landslide Monitoring: Single Base vs. Network Solutions,

a case study based on the Puerto Rico and Virgin Islands Permanent GPS Network, ***Journal of Geodetic Sciences***, 1(3): 191-203, DOI: 10.2478/v10156-010-0022-3.

(41) **Wang G.**, D. Phillips, J. Joyce, and F. O. Rivera (2011). The integration of TLS and Continuous GPS to study landslide deformation: a case study in Puerto Rico, ***Journal of Geodetic Science***, 1(1): 25-34, DOI: 10.2478/v10156-010-0004-5.

(42) **Wang G.**, D. M. Boore, G. Tang, and X.-Y. Zhou (2007). Some observations on colocated and closely spaced 1-second sampled GPS and ground-motion accelerograph data from the 2003 San Simeon (M 6.5), California, earthquake, ***Bull. Seism. Soc. Am.*** 97, 76-90.

(43) **Wang G.**, G. Tang, C. R. Jackson, X.-Y. Zhou, and Q. Lin (2006). Strong ground motions observed at the UPSAR during the 2003 San Simeon earthquake (M 6.5) and the 2004 Parkfield earthquake (M 6.0) , ***Bull. Seism. Soc. Am.*** 96, S159-S182.

(44) **Wang G.**, G. Tang, D. M. Boore, G. V. Burban, C. R. Jackson, X.-Y. Zhou, and Q. Lin. (2006). Strong surface waves observed in the Western Coastal Plain of the Taiwan Island from one aftershock of the 1999 Chi-Chi, Taiwan, Earthquake, ***Bull. Seism. Soc. Am.*** 96, 821-845.

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(47) **Wang G.**, D. M. Boore, H. Igel, and X.-Y. Zhou (2004). Comparisons of ground motions from five aftershocks of the 1999 Chi-Chi, Taiwan Earthquake with empirical predictions largely based on data from California, ***Bull. Seism. Soc. Am.*** 94, 2198-2212.

(48) **Wang G.**, and X. Y. Zhou (2004) Baseline Correction of Near Fault Ground Motion Recordings Caused by 1999 Chi-Chi, Taiwan Earthquake, ***Earthquake and Geology***, 26(1), 1-15.

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(51) **Wang G.**, X.-Y. Zhou, P. Z. Zhang, and H. Igel (2002). Characteristics of amplitude and duration for near fault strong ground motion from the 1999 Chi-Chi, Taiwan, Earthquake, ***Soil Dyn. Earthquake. Eng***., 22, 73-96.

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