

Guadalupe Esteban Vázquez Becerra, PhD

- Occupation and Affiliation** Associate Professor at The Faculty of the Earth and Space Sciences, The Autonomous University of Sinaloa Mexico (2006 –).
- Education** The Ohio State University, **PhD** Degree, 2009
The Ohio State University **Ms.** Degree, 2002
The Earth Science School, The Autonomous University of Sinaloa **Bs.** Degree, 1999.
- Research Interest** Global Navigation Satellite Systems (GNSS), GPS Networks Design and Analysis, GPS Deformation Analysis, GPS Meteorology, Reference Frames and Reference Systems.
- Appointments Held** **Postdoctoral Position.** Department of Geosciences, The University of Arizona, Tucson, August 1, 2012 to July 31 2014.
Associate Professor. The Faculty of the Earth and Space Sciences, The Autonomous University of Sinaloa Mexico, since September, 2010.
Assistant Professor. The Earth Science School, The Autonomous University of Sinaloa Mexico, September 2006 to September 2010.
Teaching and Research Assistant. The Ohio State University Columbus Ohio, September 2001 to August 2006.
- Research Groups** **Geodetic Science:** Faculty of the Earth and Space Sciences, The Autonomous University of Sinaloa Mexico, since 2006.
Sciences of Information: The School of Informatics and The Faculty of the Earth and Space Sciences, The Autonomous University of Sinaloa Mexico, member since 2011.
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G. Esteban Vázquez Becerra, PhD

Tectonic Geodesy Lab: Department of Geosciences The University of Arizona, Tucson, since 2012.

SPIN Lab: Satellite Position and Inertial Navigation, The Ohio State University Columbus Ohio, since 2005.

Honor and Awards

CONACYT: National System of Researchers (SNI - 1), 2016-2018.

SEP: Program for National Researchers (PROMEP Researcher), 2017-2020.

COECYT: State System of Researchers (Honorific Researcher), 2017-2020.

SEP: Program for National Researchers (PROMEP Researcher), 2014-2017.

COECYT: State System of Researchers (Honorific Researcher), 2014-2017.

SEP: Program for National Researchers (PROMEP Researcher), 2011-2014.

COECYT: State System of Researchers (Honorific Researcher), 2012-2014.

CONACYT: National System of Researchers (Candidate SNI), 2010-2014.

ION: Institute of Navigation (Graduate Student Award), 2006.

OSU: The Ohio State University (SPIN Lab Scholarship Award), 2005.

G. Esteban Vázquez Becerra, PhD

Research Publications

G. Esteban Vázquez B., J. Ramon Gaxiola-Camacho, Rick Bennett, G. Michel Guzman-Acevedo, Ivan E. Gaxiola-Camacho (2017). Structural evaluation of dynamic and semi-static displacements of the Juarez Bridge using GPS technology. *J. Measurement* 110, 146-153. <https://doi.org/10.1016/j.measurement.2017.06.026>.

Serra, Yolande, David K. Adams, Carlos Minjarez-Sosa, Christopher Castro, James M. Moker Jr., Avelino Arellano, Arturo Quintanar, L. Alatorre, A. Granados, **E. Vazquez**, Kirk Holub and Charles DeMets, 2016: The North American Monsoon GPS Transect Experiment 2013, *Bull. Amer. Meteor. Soc.* doi:10.1175/BAMS-D-14-00250.1

G. Esteban Vázquez B., Rick Bennett, Mijaíl Cordero C., Manuel E. Trejo Soto and J. Ramón Gaxiola-Camacho (2015). Short Baseline Calibration using GPS and EDM Observations. *Geofísica Internacional* (2015) 54(3), 255-266.

D. Adams, C. Minjarez, Y. Serra, A. Quintanar, L. Alatorre, A. Granados, **G. Esteban Vázquez B.** and J. Braun (2014). Mexican GPS Tracks Convection From North American Monsoon. *EOS, Transactions American Geophysical Union*. DOI: 10.1002/2014EO070001.

G. Esteban Vázquez B., Rick Bennett and Joshua Spinler (2013). Assessment of Pseudorange multipath at continuous GPS stations in Mexico. *Journal of Positioning*. doi:10.4236/pos.2013.43025.

G. Esteban Vázquez B. and Dorota A. Grejner-Brzezinska (2013). GPS PWV estimation and validation with Radiosonde data and numerical weather prediction model in Antarctica. *GPS Solutions* 17:29–39. DOI 10.1007/s10291-012-0258-8.

G. Esteban Vázquez B. and Dorota A. Grejner-Brzezinska (2012). A case of study for Pseudorange multipath estimation and analysis: TAMDEF GPS network. *Geofísica Internacional* (2012) 51-1: 63-72.

G. Esteban Vázquez Becerra, PhD

G. Esteban Vázquez B., Dorota A. Grejner-Brzezinska and Buckhard Schaffrin (2012). Traditional and Alternative Network Adjustment Approach for the TAMDEF GPS in Antarctica. Geodesy for Planet Earth, International Association of Geodesy Symposia 136, Springer-Verlag Berlin Heidelberg.

G. Esteban Vázquez B. (2009) Geodesy in Antarctica: A Pilot Study Based on the TAMDEF GPS Network, Victoria Land, Antarctica. Geodetic Science Report 492.

G. Esteban Vázquez B. (2008) Analysis of Stochastic Properties of GPS Observables. Geodetic Science Report 490.

G. Esteban Vázquez B. y Aníbal I. Arana Medina (2007). Delimitación de los Límites de la Zona Federal del Estado de Sinaloa Mediante Levantamiento con GPS. Revista Ciencia y Tecnología, pp. 1-3.

Dorota A. Grejner-Brzezinska, **G. Esteban Vázquez B.** and Larry Hothem (2006) Geodetic Antenna Calibration Test in the Antarctic Environment. GNSS Meeting Fort Worth Texas.

G. Esteban Vázquez B. (2003) Performance Analysis of Geodetic-Grade GPS Receivers Based on Zero Base Line measurements. Proceedings of the ION 59th Annual Meeting/CIGTF 22nd Guidance Test Symposium, pp. 188-199 Albuquerque, NM.

G. Esteban Vázquez B. (2002) Precise Positioning Estimators Based on the Stochastic Analysis and Alternative Variance covariance Matrix of GPS Observables. Proceedings of the Symposium of Geodesy, Dept. of Geodetic science and Surveying, The Ohio State University, Columbus OH, October 1-4.

Chapters Books

G. Esteban Vázquez B., Dorota A. Grejner-Brzezinska and Buckhard Schaffrin (2012). Traditional and Alternative Network Adjustment Approach for the TAMDEF GPS in Antarctica. Geodesy

G. Esteban Vázquez Becerra, PhD

for Planet Earth, International Association of Geodesy Symposia 136, Springer-Verlag Berlin Heidelberg.

G. Esteban Vázquez B., R. Balderrama-Corral y R. Victorino García (2007). Estudio y análisis de deformaciones horizontales y verticales: monitoreo geodésico, caso presa Sanalona. *“La Investigación Científica, Tecnológica y Social en la UAS (PROFAPI 2007)”* Universidad Autónoma de Sinaloa. ISBN: 978-607-9230-17-3. págs. 113-121.

R. Balderrama-Corral, **G. Esteban Vázquez B.**, R. Victorino García y M. Trejo-Soto (2006). Determinación de deformaciones horizontales y verticales en presas del estado de Sinaloa utilizando redes geodésicas GPS. *“La Investigación Científica, Tecnológica y Social en la UAS”* Universidad Autónoma de Sinaloa. ISBN: 978-970-660-236-7. págs. 17-22.

Conference Meetings

October 30 to November 4, 2016: UGM Reunión Anual, Puerto Vallarta Jalisco.

Oral Presentation: “Real-Time Probabilistic Evaluation of in-Service Performance Conditions of Bridges Using GPS” **G. Esteban Vázquez B.**, J. Ramon Gaxiola-Camacho, Manuel E. Trejo Soto and German Michel Guzman-Acevedo.

December 14-18, 2015: AGU Fall Meeting, San Francisco California.

Poster: “Performance Assessment of Bridges Using GPS: The Juarez Bridge in Culiacan, Mexico” **G. Esteban Vázquez B.**, J. Ramon Gaxiola-Camacho, Manuel E. Trejo Soto, Josias Galaviz Echagaray and German Michel Guzman-Acevedo.

November 2-7, 2015: UGM Reunión Anual, Puerto Vallarta Jalisco.

Oral Presentation: “Análisis de Deformación de la Corteza Terrestre Mediante Estaciones CGPS que Operan en México” **G. Esteban Vázquez B.**, Manuel E. Trejo Soto, Rick Bennett, Joshua Spinler and Rosendo Romero Andrade.

November 2-7, 2015: UGM Reunión Anual, Puerto Vallarta Jalisco.

G. Esteban Vázquez Becerra, PhD

Oral Presentation: “Levantamiento Topográfico y Monitoreo GNSS del Puente Benito Juárez de Culiacán Sinaloa” Josias Galaviz Echagaray, **G. Esteban Vázquez B.**, J. Ramon Gaxiola-Camacho, Manuel E. Trejo Soto and German Michel Guzman-Acevedo.

November 2-7, 2015: UGM Reunión Anual, Puerto Vallarta Jalisco.

Oral Presentation: “Mediciones y Procesamiento GNSS Para el Valle de México: Prueba Piloto Terrenos del NAICM” German Michel Guzman-Acevedo, **G. Esteban Vázquez B.**, Manuel E. Trejo Soto, Edgar Méndez Sanchez and Gabriel Auvinet Guichard.

November 2-7, 2015: UGM Reunión Anual, Puerto Vallarta Jalisco.

Oral Presentation: “Georeferenciación, Imágenes Satelitales, Google Earth y Consistencia con los GNSS: Caso Particular Ciudad de Culiacán, Sinaloa” Nadia Melissa Peralta Robles, **G. Esteban Vázquez B.**, Tiojari Guzmán Galindo and Manuel E. Trejo Soto.

November 2-7, 2015: UGM Reunión Anual, Puerto Vallarta Jalisco.

Oral Presentation: “Establecimiento de un Sistema de Monitoreo Geodésico GNSS para el Estudio y Caracterización del Comportamiento Espacial de Zonas u Objetivos de Ingeniería” Manuel E. Trejo Soto, **G. Esteban Vázquez B.**, Juan Martin Aguilar Villegas, Jennifer Astrid Moreno and Manuel Jesus Benitez Baez.

November 2-7, 2015: UGM Reunión Anual, Puerto Vallarta Jalisco.

Oral Presentation: “Ampliación y Actualización de la Red Altimétrica Geodésica Urbana de Culiacán, Sinaloa” Manuel E. Trejo Soto, **G. Esteban Vázquez B.**, Juan Martin Aguilar Villegas, Alvaro Soto, Ariathna Alapizco and Noel Gerardo Cortez.

November 2-7, 2015: UGM Reunión Anual, Puerto Vallarta Jalisco.

Oral Presentation: “Sistema Geodésico para la Evaluación del impacto de Agentes Geodinámicos en la Estabilidad de Grandes Estructuras de Ingeniería” Manuel E. Trejo Soto, **G. Esteban Vázquez B.**, Rosendo Romero Andrade and Manuel Jesus Benitez Baez.

G. Esteban Vázquez Becerra, PhD

October 29-31, 2015: Segundo Congreso Iberoamericano de Ingeniería Topográfica, Geodésica y Geomática, Colima, Colima.

Oral Presentation: “Mediciones y Procesamiento GNSS Para el Valle de México: Prueba Piloto Terrenos del NAICM” **G. Esteban Vázquez B.**, Manuel E. Trejo Soto, Edgar Méndez Sanchez, Gabriel Auvinet Guichard and German Michel Guzman-Acevedo

December 15-19, 2014: AGU Fall Meeting, San Francisco California.

Poster: “Crustal Deformation Analysis at CGPS Sites Spanning Mexico” **G. Esteban Vázquez B.**, Rick Bennett and Joshua Spinler.

December 15-19, 2014: AGU Fall Meeting, San Francisco California.

Poster: “GPS-PWV Estimation and Analysis for CGPS Sites Operating in Mexico” Omar Gutierrez Rodriguez, **G. Esteban Vázquez B.**, Rick Bennett and David Adams.

December 15-19, 2014: AGU Fall Meeting, San Francisco California.

Poster: “The North American Monsoon GPS TRANSECT Experiment 2013” D. Adams, C. Minjarez, Y. Serra, A. Quintanar, L. Alatorre, A. Granados, **G. Esteban Vázquez B.** and J. Braun

December 11-12, 2014: 1ER Encuentro de Especialistas en Geodesia, Geomática y Astronomía 2014, Culiacán, Sinaloa.

Oral Presentation: “Estudio y Análisis de Redes Geodésicas CGPS que Operan en México” **G. Esteban Vázquez B.**, Rick Bennett and Joshua Spinler.

December 9-13, 2013: AGU Fall Meeting, San Francisco California

Poster: “Evaluating Pseudorange Multipath at CGPS Stations Spanning Mexico” **G. Esteban Vázquez B.**, Rick Bennett and Joshua Spinler.

May 27-29, 2013: Primer Encuentro de Climatología Regional del Noroeste de México, 2013. Hermosillo, Sonora.

Oral Presentation: GPS in Atmospheric Sciences. **G. Esteban Vázquez B.**

G. Esteban Vázquez Becerra, PhD

December 5-9, 2011: AGU Fall Meeting, San Francisco California

Poster: “Feasibility of Construction of the Continuously Operating Geodetic GPS Network of Sinaloa Mexico” **G. Esteban Vázquez B.** and Cesar Jacobo Gonzalez.

November 7-12, 2010: UGM Reunión Anual, Puerto Vallarta Jalisco.

Oral Presentation: “Detección y Análisis de Efectos Ionosféricos y de Multiruta Para Pseudo-distancias en la Red Geodésica Nacional Activa (RGNA).” **G. Esteban Vázquez B.**, Moisés Aramis Barrón Noriega, Carlos Ramón Moraila Valenzuela y Manuel López Moreno.

November 7-12, 2010: UGM Reunión Anual, Puerto Vallarta Jalisco.

Poster: “Calibración y Comparación de Línea Base Utilizando Mediciones GPS y de Taquímetro Electrónico”. **G. Esteban Vázquez B.**, Mijaíl Cordero Chávez y Rigoberto Balderrama Corral.

December 13-17, 2010: AGU Fall Meeting, San Francisco California

Poster: “Pseudorange multipath Estimation and Analysis at the GPS RGNA Network” **G. Esteban Vázquez B.** and Moisés Aramis Barrón Noriega.

August 31 to September 4, 2009: Geodesy For Planet Earth, International Association of Geodesy, IAG, Buenos Aires Argentina.

Oral Presentation: Traditional and Alternative Network Adjustment Approach for the TAMDEF GPS in Antarctica. **G. Esteban Vázquez B.**, Dorota A. Grejner-Brzezinska and Buckhard Schaffrin.

October 26-31, 2008: UGM Reunión Anual, Puerto Vallarta Jalisco.

Oral Presentation: “Determinación de un Geoide Local Para México Usando la Metodología Empleada Cuando se Mide Gravedad Aerotransportada” **G. Esteban Vázquez B.**, García López Ramón Victorino, Trejo Soto Manuel y Arana Medina Aníbal Israel.

October 26-31, 2008: UGM Reunión Anual, Puerto Vallarta Jalisco.

Oral Presentation: “Obtención de Vapor de Agua a Partir de Mediciones con GPS: Caso Particular la Red TAMDEF en la

G. Esteban Vázquez Becerra, PhD

Antarctica” **G. Esteban Vázquez B.**

October 26-31, 2008: UGM Reunión Anual, Puerto Vallarta Jalisco.

Poster: “Estudio y Análisis de Deformaciones de Obras Hidráulicas: Caso Particular Presa Salvador Alvarado “Sanalona”” **G. Esteban Vázquez B.**, Balderrama Corral Rigoberto, Trejo Soto Manuel, Beltrán Soto Diana Patricia y Díaz Hernández Ciro de la C.

October 28 to November 2, 2007: UGM Reunión Anual, Puerto Vallarta Jalisco.

Oral Presentation: “Análisis Estocástico de las Observaciones GPS (Experimento de Línea-Base Cero)” **G. Esteban Vázquez B.**

October 28 to November 2, 2007: UGM Reunión Anual, Puerto Vallarta Jalisco.

Oral Presentation: “Levantamiento de la Zona Federal Marítimo Terrestre del Estado de Sinaloa Mediante GPS” **G. Esteban Vázquez B.**, R. Victorino García L., Carlos R. Moraila V.

December 10-14, 2007: AGU Fall Meeting, San Francisco California.

Poster: “Mapping the Coastline Limits of the Mexican State Sinaloa Using GPS” **G. Esteban Vázquez B.**

December 10-14, 2007: AGU Fall Meeting, San Francisco California.

Poster: “Geodesy, A Bibliometric Approach For 2000-2007” **G. Esteban Vázquez B.** and Carlos Landeros.

June, 2006: The Antarctic Meteorological Observation, Modeling, and Forecasting Workshop, Bo. Co.

Oral Presentation: The Moisture Performance in AMPS: A Comparison Between GPS-Extracted and AMPS-Predicted Precipitable Water Vapor. Ryan L. Fogt, David H. Bromwich and **G. Esteban Vázquez B.**

September 26-29, 2006: GNSS Meeting Fort Worth Texas.

Oral Presentation: Comparative study of GPS PWV, Radiosonde Data

G. Esteban Vázquez Becerra, PhD

and a Numerical Weather Prediction Model in Antarctica. **G. Esteban Vázquez B.**, Dorota A. Grejner-Brzezinska and Ryan L. Fogt.

September 26-29, 2006: GNSS Meeting Fort Worth Texas.

Oral Presentation: Geodetic Antenna Calibration Test in the Antarctic Environment, Dorota A. Grejner-Brzezinska, **G. Esteban Vázquez B.** and Larry Hothem.

Teaching

Global Positioning Systems
Satellite Geodesy
Geometric Geodesy
Physical Geodesy
Error Analysis

Funding Projects

Design, Construction and Commissioning of a Geodetic Network for Continuous Monitoring by Means of Global Navigation Satellite Systems (GNSS) for the Evaluation of the Subsidence in the Valley of Mexico. September 19, 2016 to September 19, 2018 (**CONACYT: XXXX**).

3D Representation and GNSS Monitoring of the Benito Juarez Bridge of Culiacan, Sinaloa, January 2015 to December 2015 (**UAS PROFAPI2014/222**).

Study and Analysis of CGPS Networks in Mexico, Academic Posdoctoral Stay (Extension), Department of Geosciences The University of Arizona, Tucson, August 1 2013 to July 31 2014 (**CONACYT: 203430**).

Study and Analysis at The GPS RGNA Network, Academic Posdoctoral Stay, Department of Geosciences The University of Arizona, Tucson, August 1 2012 to July 31 2013 (**CONACYT: 186766**).

Feasibility of Construction of the Continuously Operating Geodetic

G. Esteban Vázquez Becerra, PhD

GPS Network of Sinaloa, Mexico, June 2011 to June 2012 (**UAS PROFAPI2011/180**).

Pseudorange Multipath Estimation and Analysis at the GPS RGNA Network, June 2010 to June 2011 (**UAS PROFAPI2010/136**).

Geodetic GPS Network For Sinaloa, April-December 2006 (**SEMARNAT-UAS/ECT-Municipios Sinaloa**).

Mapping the Coastline Limits of the Mexican State Sinaloa, April-December 2007 (**SEMARNAT-UAS/ECT-Municipios Sinaloa**).

Thesis Supervised

2016: Omar Gutiérrez Rodríguez: **ESTIMACIÓN DE VAPOR DE AGUA PRECIPITABLE (PWV) PARA ESTACIONES CGPS EN MÉXICO** (Master Degree, in progress!).

September 18, 2015: German Michel Guzman Acevedo: **ESTABILIDAD DE MEDICIONES GNSS Y SUS IMPLICACIONES PARA LA OBTENCIÓN DE ALTURAS ORTOMÉTRICAS, CASO PARTICULAR: RED GEODÉSICA LOCAL DE LA CIUDAD DE CULIACÁN, SINALOA** (Bachelor Degree, completed!).

May 9, 2014: Cesar del Ángel Jacobo González: **ESTUDIO DE FACTIBILIDAD PARA EL ESTABLECIMIENTO DE UNA RED GEODÉSICA GNSS PARA SINALOA** (Bachelor Degree, completed!).

May 18, 2012: Mijaíl Cordero Chávez: **CALIBRACIÓN Y COMPARACIÓN DE LÍNEA BASE UTILIZANDO MEDICIONES GPS Y DE TAQUÍMETRO ELECTRÓNICO** (Bachelor Degree, completed!).

Professional Memberships

UNAVCO Member Representative, since 2012.

American Geophysical Union (AGU), since 2005.

International Association of Geodesy (IAG), since 2009.

G. Esteban Vázquez Becerra, PhD

Institute of navigation, since 2003.

Mexican Geophysical Union (UGM), since 2006.

**Affiliation And
Contact
Information** G. Esteban Vázquez Becerra, PhD.
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(Associate Professor)
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