

Cesar J. Carrasco Trejo, PhD.

Work

University of Texas at El Paso
Department of Civil Engineering
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Education

PhD Materials Science and Engineering, The University of Texas at El Paso, July 2000.
MS Civil Engineering, The University of Texas at El Paso, July 1992.
BS Civil Engineering, Instituto Tecnológico y de Estudios Superiores de Monterrey, México, December 1989.

Academic Experience

Since Sep 2013 **Professor**

Department of Civil Engineering, The University of Texas at El Paso

Sep 2009 – Aug 2018 **Department Chair**

Civil Engineering Department, The University of Texas at El Paso

<http://ce.utep.edu>

The Department of Civil Engineering at UTEP offers the following degrees: Bachelor of Science in Civil Engineering, Bachelor of Science in Construction Engineering and Management, Master of Science in Civil Engineering, Master of Science in Environmental Engineering, Master of Engineering in Civil and Environmental Engineering, Master of Science in Construction Management and a Doctor of Philosophy in Civil Engineering. With 19 faculty members, two staff personnel, and two part-time instructors, the department serves a student population of 320 undergraduate, 80 master and 20 doctoral students. The department faculty conducts research in the areas of transportation infrastructure, water treatment, air quality and aerospace structures with expenditures above \$3 million per year.

Through my leadership as chair the department has accomplished very significant goals:

- *Development of 2010-2015 strategic plan*
- *Increase of research expenditures from \$1.8 to \$3.2 Million per year*
- *Re-accreditation (ABET) of the BS in Civil Engineering program in 2013*
- *The creation of the MS in Construction Management program*
- *The creation of the BS in Construction Engineering and Management program*
- *The creation of the Master of Engineering in Civil and Environmental Engineering program*
- *The creation of the Water Resources Management track within the MECEE program*
- *Redesign of the BS in Civil Engineering degree plan*
- *Hiring of five tenure track and six non-tenure track faculty members*

Since Jul 2007 **Director**

Future Aerospace Science and Technology Center, The University of Texas at El Paso

<http://fast.utep.edu>

The FAST Center conducts multidisciplinary research and development projects for the aerospace industry related to structural reliability, risk assessment, software development and other areas. Its contracts portfolio includes the Boeing Company, Lockheed Martin, Jacobs Engineering Inc., Air Force Office of Scientific Research and the Johns Hopkins University/Applied Physics Lab. Many of these contracts are flow-through contracts from NASA. Since its inception as an R&D center in 2007, the FAST Center has reached total research expenditures of \$7 million involving faculty and students from the Departments of Civil Engineering, Mechanical Engineering, Electrical Engineering, Computer Science, Geological Sciences, Chemistry and Biology.

Sep 2006 – Aug 2013 **Associate Professor**

Department of Civil Engineering, The University of Texas at El Paso

Sep 2000 – Aug 2006 **Assistant Professor**

Department of Civil Engineering, The University of Texas at El Paso

Relevant Consulting Experience

Since 2004 **Geometrica Inc.**

Development of non-linear models of large-scale dome structures to determine their buckling capacity under wind loads. Also developed non-linear models and analyses of the company's proprietary connector to determine its elasto-plastic response leading to the calculation of ultimate capacity. The results of these analyses resulted in a more in-depth understanding of the response of the different components of the connector.

1999 – 2005 **Edison Welding Institute (EWI) and Southwest Research Institute (SwRI)**

Development of algorithms and software tool to calculate reliability based failure assessment diagrams, probabilities of failures and cost-optimized NDT sampling frequencies for pipeline welds to be implemented by the Pipeline Research Council International (PRCI). Before the development of this tool, the weld assessment was deterministic and only gave results of "good" or "bad" for the condition of the weld.

Courses Offered

Undergraduate

BE 2434	Mechanics I (Statics and Mechanics of Materials)
CE 3336	Civil Engineering Materials
MECH 3365	Dynamic Response
CE 3343	Structural Analysis I
CE 4361	Structural Design II (Design of Steel Structures)

Graduate

CE 5303/CE6303	Engineering Analysis I
CE 5307	Theory of Finite Element Analysis
CE 5308	Advanced Design of Steel Structures
CE 5311	Structural Buckling and Stability
CE5325	Design of Structures for Dynamics Loads
CE5327	Continuum Mechanics I
CE5332/ CE6332	Modern Methods of Engineering Computation

Research Interests

Research interests include the modeling and simulation of linear and non-linear structural/mechanical systems and structural health assessment. The following are specific areas of interest:

- Computational Mechanics including linear and non-linear finite element modeling of civil infrastructure systems
- Non-destructive testing and evaluation of aerospace and civil infrastructure systems
- Risk and reliability of structural systems
- Risk assessment of micrometeoroid impacts on aerospace systems
- Modeling and testing of hypervelocity impact events for ballistic and shielding applications

Dissertations and Theses Supervised

Currently Being Supervised

Dissertation Committee Chair: “Finite Element Modeling of Continuously Reinforced PCC Pavements Under Environmental and Traffic Loads”, Nancy Aguirre, Civil Engineering.

Dissertation Committee Chair: “Verification and Validation of Jointed and Continuously Reinforced Computer Model”, Abbasali TaghaviGhalesari, Civil Engineering.

Recently Completed

Dissertation Committee Chair: “Characterization of Metal Foams as Energy Absorbers”, Edel G. Arrieta, Civil Engineering, May 2017.

Thesis Committee member (Dr. Pavana Prabhakar): “Studies On Woven Carbon/Vinyl Composites: Environmental Effects, Joining And Hybridization”, Ricardo Garcia Delgado, Mechanical Engineering, May 2017.

Dissertation Committee Member: “Damage Tolerance and Assessment of Unidirectional Carbon Fiber Composites: An Experimental and Numerical Study”, Mark Flores, Mechanical Engineering, May 2016

Thesis Committee Chair: “Reliability Based Design of Shielding Structures Under Hypervelocity Impact”, Levi Alonso Pereda, Civil Engineering, May 2015

Dissertation Committee Chair: “Enhanced Finite Element Modeling of Thermo-Mechanical Responses of Jointed PCC Pavements Under Environmental and Traffic Loads”, Mohammad Ali Zokaei Ashtiani, Civil Engineering, May 2014.

Dissertation Committee Member (Dr. Nazarian, Chair): “Studying the Parameters Involved With Modulus-Based Construction Quality Control for Compaction of Unbound Pavement Layers”, Mehran Mazari, Civil Engineering, May 2014.

Dissertation Committee Member (Dr. Ferregut, Chair): “A Method to Reduce Concrete Plastic Shrinkage Cracking Using Vibration”, Mustafa A. Aldalinsi, Civil Engineering, December 2013.

Dissertation Committee Member (Dr. Nazarian, Chair): “Numerical Study on Performance and Sensitivity of Seismic Nondestructive Methods to Identify Deterioration in Concrete Structures”, Hoda Azari, Civil Engineering, May 2013.

Thesis Committee member (Dr. Hurtado, Chair): "Phreatomagmatic Activity on the Moon: Possibility of Pseudocraters on Mare Frigoris", Jose H. Garcia, Geological Sciences, May 2012.

Thesis Committee Chair: "The Effect of MMOD Porosity on Crater Depth After Hypervelocity Impact", David Ledesma, Civil Engineering, December 2011.

Thesis Committee Chair: "Determination of Critical Parameters for Shielding of Solar Probe" Sergio R. Mendez, Civil Engineering, December 2011.

Thesis Committee Chair: "Evaluation Methods for Health Monitoring of Aerospace Structures Rotary Joints", Sergio A. Navarro, Civil Engineering, December 2011.

Thesis Committee Member (Dr. Ferregut, Chair): "Study Of Probabilistic Approach For Structural Health Assessment of Aerospace Structures", Jose A. Garcia Varela, Civil Engineering, December 2011.

Thesis Committee Member (Dr. Shafirovich, Chair): "Combustion of Lunar Regolith Mixed With Energetic Additives: Thermodynamic Calculations and Experimental Studies", Francisco Alvarez, Mechanical Engineering, December 2011.

Thesis Committee Member (Dr. Shafirovich, Chair): "Experimental Investigation of Magnesium/Regolith Combustion For In-Situ Production of Materials on The Moon", Christopher White, Mechanical Engineering, December 2011.

Thesis Committee Member (Dr. Chessa, Chair): "A Combined X-FEM And Level Set Approach For Modeling Composite Material's Micro Structure", Himanshu Kumar, Mechanical Engineering, August 2011.

Thesis Committee Member (Dr. Choudhuri, Chair): "Design and CFD Optimization of Methane Regenerative Cooled Rocket Nozzles", Christopher Bradford, Mechanical Engineering, August 2011.

Dissertation Committee Member (Dr. Nazarian, Chair): "Evaluation of nondestructive technologies to assess presence and extent of delamination of hot mix asphalt airfield pavements", Manuel Celaya, Civil Engineering, May 2011.

Dissertation Committee Member (Dr. Nazarian, Chair): "Strategies to improve and preserve flexible pavements at intersections", Imad Abdallah, Civil Engineering, May 2011.

Thesis Committee Co-Chair with Dr. Nazarian: "Impact of Truck Suspension and Road Roughness on Loads Exerted to Pavements", Bonabi S. Misanghi, Civil Engineering, May 2011.

Thesis Committee Member (Dr. Varma, Chair): "The Effect Of Cr, Si And B On The Oxidation Behavior On Three Nb-Based Alloys", David Alvarez, Metallurgical and Materials Engineering, May 2011.

Thesis Committee Chair: "Sensitivity Analysis of the Johnson-Cook Plasticity Model For Hypervelocity Impacts: A Hydro-Code Study", Carlos D. Castellanos, Mechanical Engineering, May 2010.

Dissertation Committee Chair: "Integrated Finite Element Analysis Program to Evaluate Pavement Performance and Predict Non-Destructive Testing Response", Cesar Tirado, Civil Engineering, December 2009.

Thesis Committee Chair: "Verification of NYSlab: a Software for the Analysis of Jointed Pavements", Maryam Limouee, Civil Engineering, December 2009.

Thesis Committee Member (Dr. Chessa, Chair): "Impacting Testing of High Temperature Ceramics Through The Use of a Vitiated Heater for Hot and Cold Fire Collisions", Adrian Trejo, Mechanical Engineering, December 2009.

Thesis Committee Member (Dr. Everett, Chair): “An Impedance Model Approach for Adaptive Cruise Control”, Xi Sun, Mechanical Engineering, May 2009.
Thesis Committee Chair: “Buckling of Dome Structure With Opening, Under Wind Load”, Anup Ramesh Marathe, Civil Engineering, May 2009.

Awarded Research Grants

Solar Probe Plus – Development of Methodologies and Tools to Assess MMOD Risk, Principal investigator, C. Carrasco PI, Oct 1, 2008 – March 31, 2018
Johns Hopkins University/APL (NASA as prime), \$800,000

Evaluating Mechanical Properties of Earth Material During Intelligent Compaction, Co-principal Investigator, S. Nazarian PI, C. Carrasco, R. Salehi Ashtiani Co PIs, Jul 1, 2015 – Jun 30, 2019
National Cooperative Highway Research Program, \$500,000

Numerical Simulation of Intelligent Compaction Technology for Construction Quality Control, Principal Investigator, C. Carrasco PI, S. Nazarian Co_PI, Apr 1, 2013 – Jun 30, 2014
Rutgers University (UTC), FHWA/USDOT, \$43,750

Improvement of Construction Quality Control By Using Intelligent Compaction Technology For Base And Soil, Co-principal Investigator, S. Nazarian PI, C. Carrasco, R. Aldauri Co Pis, Nov 1, 2012 – Nov 30, 2013
Texas Department of Transportation, \$212,000

Tier 1 University Transportation Center, Co-principal investigator, S. Nazarian PI, R. Cheu, C. Chang-Albitres, C. Carrasco, V. Tandon, S. Hernandez Co-PIs, Jan 1, 2012 – Dec 31, 2013
Rutgers University, FHWA/USDOT, \$300,000

Center for Space Exploration Technology Research, Co-principal investigator, A. Choudhuri PI, L. Everett, C. Carrasco, J. Chessa, C. Ramana and E. Shafirovich Co-PIs, Oct 1, 2009 – Sep 30 2014
NASA, \$5,900,000

Development of NYPAS: A Pavement Analysis Tool, Principal investigator, C. Carrasco PI, S. Nazarian and I. Abdallah Co-PIs, Sept 1, 2008 – Apr 5, 2013
Engineering and Software Consultants (FHWA as prime), \$219,000

Structural Integrity – Study of Probabilistic Approach for ISS Structural Life Assessment and SARJ Health Assessment, Phase I and II, Co-principal investigator, Multiphase project with C. Ferregut, C. Carrasco as PIs, Oct 1, 2009 – Jul 1, 2012
Boeing (NASA as prime), \$280,000

Development of JSLAB 2007: Enhancements to JSLAB 2004, Principal investigator, C. Carrasco PI, P. Shokouhi and S. Nazarian, Jul 6, 2007 – Jul 5, 2009
Engineering and Software Consultants (NYDOT as prime), \$120,000

Modeling of Novel Projectiles for Lethality Enhancement of Near-Miss Warheads, Principal investigator, C. Carrasco PI, Sep 30, 2005 – Aug 31, 2008
Missile Defense Agency, \$172,000

Role of Coarse Aggregate Point and Mass Strength on Resistance to Load in HMA, Co-principal investigator, S. Nazarian PI, R. Langford, C. Carrasco, V. Tandon Co-PIs, Sep 1, 2005 – Aug 31, 2008
Texas Department of Transportation, \$154,000

Preliminary Dust Shielding Study for the “Solar Probe” Spacecraft, Principal investigator, C. Carrasco PI, R. Osegueda Co-PI, Aug 1, 2004 – Jun 31, 2007
Johns Hopkins University/APL (NASA as prime), \$142,000

Model Calibrations with Local Accelerated Pavement Test Data and Implementation for Focused Solutions to NAFTA Problems – Pool Fund
S. Nazarian PI

Subprojects:

Development of methodology to calculate super-heavy truck permit, Co-principal Investigator, S. Nazarian , N. Gharaibeh, C. Carrasco, Sept 1, 2006 – Aug 31, 2007
TxDOT, \$32,000

Development of IntPave: Flexible pavement analyzer, Co-principal Investigator, S. Nazarian PI, C. Carrasco, September 1, 2005 – August 31 2006
TxDOT, \$72,000

Integrated Physical-Social-Economic System Dynamics Modeling for Managing Extreme Events Induced Risk on the U.S.-Mexico Border Crossing Infrastructure, Co-principal investigator, S. Nazarian PI, Y.C. Chiu, C. Carrasco, C. Ferregut, P. Gurian, J. Heyman and T.M Fullerton, Co-PIs, Oct 1, 2003 – Sep 30, 2006
National Science Foundation, \$470,000

Characterization of Composite Materials in Control Surface Applications, Principal investigator, C. Carrasco PI, M. Huerta Co-PI, Sep 2001 – Aug 2004
Raytheon Missile Systems Engineering Directorate, \$155,000

Modeling hypervelocity impact for kill enhancement of ballistic missile warheads, Principal investigator, C. Carrasco PI, R. Osegueda Co-PI, Jan 1, 2002 – Dec, 31 2003
Ballistic Missile Defense Organization, \$260,000

Hypervelocity Penetration Mechanics: A Study Using a Hydrodynamic Computer Code, Co-principal investigator, April 9, 2002 – September 30, 2002, M. Huerta PI, C. Carrasco Co-PI
Sandia National Laboratory, \$25,000

CONTOUR Dust Shield Verification, Co-principal investigator, R. Osegueda PI, C. Carrasco and J. Eftis Co-Pis, Mar 1, 2000 – Dec 31, 2001
Johns Hopkins University/APL (NASA as prime), \$129,000

Constitutive-Microdamage Modeling of Target-Missile Damage Caused by Hypervelocity Impact, Co-principal investigator, J. Eftis PI, R. Osegueda, C. Carrasco Co-Pis, Oct 1, 1997 – May 31, 2000
Ballistic Missile Defense Organization, \$283,000

Journal and Conference Proceedings Articles

- Tirado, C., Mazari, M., Carrasco, C. and Nazarian, S. "Simulating Response of Different Light Weight Deflectometer Testing Using Finite Element Modeling." Presented at the 94th Annual Meeting of the Transportation Research Board, Washington, D.C., 2015.
- Zokaei Ashtiani, M. A., C. Carrasco, and S. Nazarian, "Finite Element Modeling of Slab-Foundation Interaction on Rigid Pavement Applications," *Computers and Geotechnics*, Volume 62, October 2014, Pages 118-127
- Tirado, C., Mazari, M., Carrasco, C., and Nazarian, S. "A Rapid Algorithm for Considering Nonlinear Material Response of Flexible Pavement Layers for Prediction of Pavement Distress." TRB 93th Annual Meeting Compendium of Papers DVD, Paper No. 14-2152, Transportation Research Board, Washington D.C., 2014.
- Cesar J. Carrasco, Sergio Mendez, Douglas S. Mehoke, "Selection of Critical Design Parameters for MMOD Protection in Interplanetary Missions," presented in the 2012 Hypervelocity Impact Symposium and published in *Procedia Engineering*, 58 (2013) 574 – 583.
- Zokaei-Ashtiani, M. A., Tirado, C., Carrasco, C., Nazarian, S., Bendaña, J., "Modeling of slab-foundation friction in jointed concrete pavements under nonlinear thermal gradient or traffic loads." *Journal of Transportation Research Board*, 2367(1), 123-131, 2013.
- Misaghi, S., Tirado, C., Nazarian, S. and Carrasco, C. "Effect of Road Vehicle Interaction on Pavement Condition Deterioration." TRB 91st Annual Meeting Compendium of Papers DVD, Paper No. 12-2757, Transportation Research Board, Washington, D.C., 2012.
- Mehoke, D., Swaminathan, P. K., Carrasco, C., Brown, R., Kerley, G., Iyer, K., "A Review of the Solar Probe Plus Dust Protection Approach," *IEEE Aerospace Conference proceedings*, March 2012.
- Iyer, K., Mehoke, D., Brown, R., Swaminathan, P. K., Carrasco, C., R. C. Batra, "Use of Hydrocode Modeling to Develop Advanced MMOD Shielding Designs" *IEEE Aerospace Conference proceedings*, March 2012.
- Carrasco, C., Nazarian, S., Limouee, M., Bendaña, J., "Development Of NYSlab: An Improved Jointed Pavement Analysis Tool," *Journal of Transportation Research Board*, Pavement Management 2011, Volume 3, pp. 107-115, 2011.
- Tirado, C., Carrasco, C., Mares, J.M., Nasir G., Nazarian, S., Bendaña, J. "Process to Estimate Permit Costs for Movement of Heavy Trucks on Flexible Pavements," *Journal of Transportation Research Board*, Pavement Management 2010, Volume 2, pp. 187-196, 2010.
- Melchor-Lucero, O., Carrasco, C. Computational Technique to Assess Warhead Lethality against Ballistic Missile, *J. of Aerospace Eng.*, Vol. 22, No.4, October 1, 2009, pp. 354-364.
- Octavio Melchor-Lucero, Carrasco, C., Espino, L. C., Fernandez, A. and Osegueda, R., "Computer Modeling for a Generalized Approach to Measure Impact Damage", *J. of Engineering Mechanics*, Vol. 133, No. 3, March, 2007, pp. 299-307.

- Cesar Carrasco, Douglas Eng, Kenneth Potocki and Ingrid Mann, "Preliminary Dust-Impact Risk Study For The "Solar Probe" Spacecraft," *International Journal of Impact Engineering*, Volume 33, Issues 1-12, December 2006, Pages 133-142.
- Cesar Carrasco, Octavio Melchor-Lucero, Roberto Osegueda, Luis Espino and Alvaro Fernandez, "Damage Lethality Comparison of Spherical and Cylindrical Projectiles Impacting on a System of Bumper Plates", *International Journal of Impact Engineering*, Volume 33, Issues 1-12, December 2006, Pages 143-157.
- Cesar Carrasco, Douglas Eng, Kenneth Potocki and Ingrid Mann, "Preliminary Dust-Impact Risk Study For The "Solar Probe" Spacecraft," *International Journal of Impact Engineering* Volume 33, Issues 1-12, December 2006, Pages 133-142.
- Tirado, C., Yan, Q., Carrasco, C., Nazarian, S. and R. Osegueda. "A GIS-Based Algorithm for Estimating Damage Due To Superheavy Loads." *Publication FHWA/TX-05/9-1502-01-5*, Center for Transportation Infrastructure Systems, The University of Texas at El Paso, 2005
- Ben H. Thacker, Cesar J. Carrasco, Robert W. Wark And Bill Amend, "Optimized Sampling Frequencies For Weld Reliability Assessments Of Long Pipelines" *Proceedings of IPC 2004 International Pipeline Conference*, October 4 - 8, 2004 , Calgary, Alberta, Canada.
- J. Eftis, C. Carrasco and R.A. Osegueda, "A Constitutive-Microdamage Model to Simulate Hypervelocity Projectile-Target Impact, Material Damage and Fracture," *Int. Journal of Plasticity*, vol 19/9 pp 1321 - 1354, 2003.
- J. Eftis, C. Carrasco and R.A. Osegueda, "Simulations of hypervelocity impact damage and fracture of aluminum targets using a constitutive-microdamage material model," *International Journal of Impact Engineering*, Volume 26, Issues 1-10, December 2001, Pages 157-168
- R.A. Osegueda, C. J. Carrasco, M. Orozco, J. Eftis, E. Reynolds and T.G. Sholar, "CONTOUR Dust Shield Performance," *ASCE J. Aerospace Engineering*, Vol. 14/4, pp. 147-157, 2001.
- C. Carrasco, J. Eftis, and R. Osegueda, "Constitutive Modeling Of Spall-Fracture On 1100 Aluminum After Hypervelocity Impact," *Proceedings of EXPLOMET 2000 International Conference on Fundamental Issues and Applications of Shock -Wave and High-Strain-Rate Phenomena*, pp.467-474, 2001.
- J. Eftis, C. Carrasco and R. Osegueda, "Modeling dynamic fracture following high shock compression," *Proceedings of Damage and Fracture Mechanics VI: Computer Aided Assessment and Control*, pp. 267-279, 2000.
- J. Eftis, C. Carrasco and R. Osegueda, "Constitutive Model Simulation of High Shock Compression, Micro-Damage Evolution and Fracture Associated with Hypervelocity Impact," *Proceedings of the International Conference of Role of Mechanics for Development of Science and Technology, MESO Mechanics 2000*, vol.2, pp. 279-290, 2000.
- R.A. Osegueda, M. Macias, G. Andre, C.M. Ferregut and C. Carrasco, "Fusion of Modal Strain Energy for Health Monitoring of Aircraft Structures," in Nondestructive Evaluation of Aging Aircraft, Airports and Aerospace Hardware IV, Ajit. K. Mal, Ed., *Proceedings of SPIE* Vol. 3994, 2000.
- L. R. Pereyra, R. A. Osegueda, C. Carrasco and C. Ferregut, "Detection of Damage in a Stiffened Plate from Fusion of Modal Strain Energy Differences," *Proc. of the International Modal Analysis Conference XVIII, SEM*, Vol. II, San Antonio, TX, Feb. 7-10, 2000, pp. 1218-1224.

- J. Eftis, C. Carrasco and R. Osegueda, "Elastic-viscoplastic-microdamage modeling to simulate hypervelocity projectile-target impact and damage," *Proceedings of the 7th International Symposium on Structural Failure and Plasticity, IMPLAST 2000*, 2000.
- R. A. Osegueda, G. Andre, C. Carrasco, C. M. Ferregut and L. Pereyra, "Effects of Mode Pairing in Strain Energy-Based Damage Detection Methods Applied to an Aerospace Structure," *Proc. of the International Modal Analysis Conference XVIII, SEM*, Vol. II, San Antonio, TX, Feb. 7-10, 2000, pp. 1218-1224.
- Warke, R. W., Wang, Y.-Y., Ferregut, C. M., Carrasco, C. J. and Horsley, D. J., "A FAD-Based Method for Probabilistic Flaw Assessment of Strength-Mismatched Girth Welds," *Proceedings of the 1999 Pressure Vessels and Piping Conference, PVP-Vol. 386*, Probabilistic and Environmental Aspects of Fracture and Fatigue, ASME, 1999.
- Pereyra, L.R., Osegueda, R.A., Carrasco, C. and Ferregut, C., "Damage Detection in a Stiffened-Plate Using Modal Strain Energy Differences," in *Nondestructive Evaluation of Aging Aircraft, Airports and Aerospace Hardware III*, Ed. A. K. Mal, *Proceedings of SPIE*, Vol. 3586, Paper 3586-29, March 1999.
- R.A. Osegueda, A. Garcia-Diaz, S. Ashur, O. Melchor, S.-H. Chang, C. Carrasco, A. Kuyumcu, "GIS-Based Network Routing Procedures for Overweight Oversized Vehicles," *Journal of Transportation Engineering*, Vol. 125, No. 4, July/August 1999, pp. 324-331.
- Carrasco, C. J., Osegueda, R. A., Ferregut, C. M. and Grygier, M., "Damage Localization in a Space Truss Model Using Modal Strain Energy," *Proceedings of the 15th International Modal Analysis Conference*, Orlando Fl, Feb. 3-6, 1997. Pg. 1786-1792.
- Meza, Jr., R., Carrasco, C. J., Osegueda, R. A., James III, G. and Robinson, N. A., "Damage Detection in a DC-9 Fuselage Using Laser Doppler Velocimetry Measurements," *SPIE's 1997 Smart Structures and Materials Symposium*, San Diego, CA, March 3-6, 1997.
- Perez, L. E., Ferregut, C. M., Carrasco, C. J., Paez, T. L., Barney, P. and Hunter, N. F., "Statistical Validation of a Plate Finite-Element Model for Damage Detection," *Proceedings of the SPIE's 1997 Smart Structures and Materials Symposium*, San Diego, CA, March 3-6, 1997.
- Osegueda, R. A., Carrasco, C. J., and Meza, Jr., R., "A Modal Strain Energy Distribution Method to Localize and Quantify Damage," *Proceedings of the 15th International Modal Analysis Conference*, Orlando Fl, Feb. 3-6, 1997. Pg. 1298-1304.
- Meza, Jr., R., Carrasco, C. J., Osegueda, R. A., James III, G. and Robinson, N. A., "Damage Detection in a DC-9 Fuselage Using Laser Doppler Velocimetry," *Proceedings of the 15th International Modal Analysis Conference*, Orlando, Fl, Feb. 3-6, 1997. Pg. 1779-1785
- Carrasco, C., Osegueda, R., and Ferregut, C. "Localizacion y Cuantificacion de Daños en una Estructura Tridimensional Usando la Energia de Deformacion Modal," *Memoria del XI Congreso Nacional de Ingenieria Sismica*, Volume II, Veracruz, Mexico, November 26-29, 1997, pp. 851-860. (In Spanish)
- Carrasco, C. J., Osegueda, R. A., Ferregut, C. M., Harms, B., Meza, D. and Grygier, M., "Comprehensive Modal Tests of a Space Truss Model for Damage Assessment," *Proceedings of the 5th ASCE International Conference on Engineering, Construction, and Operations in Space - Space '96*, Albuquerque, NM, Jun 1-6, 1996, pg. 1141-1147

Presentations

- Carrasco, C. and Nazarian, S., "UTEP Jointed Concrete Pavement Design." To be presented at the 2016 TxDOT/CCT Concrete Conference, April 3-5 2016.

- Tirado, C., Mazari, M., Carrasco, C. and Nazarian, S. "Evaluating the Influence Depth of Light Weight Deflectometer through Finite Element Modeling." Accepted for presentation at the Airfield and Highway Pavement Conference 2015, ASCE, Miami, FL.
- Tirado, C., Carrasco, C., Norwood, G.J., Nazarian, S. and Tingle, J.S. (2014). "Benefits of Inclusion of Geosynthetic Products in Reinforcement of Flexible Airfield Pavements Using Three-Dimensional Finite Element Modeling." 2014 FAA Worldwide Airport Technology Transfer Conference Proceedings: Innovations in Airport Safety and Pavement Technology, FAA, Galloway, NJ, August 5-7.
- Mohammad Ali Zokaei Ashtiani, Cesar J. Carrasco, Soheil Nazarian, Julian Bendaña, "Effect of Nonlinear Temperature Gradient on the Response of Jointed Concrete Pavements", presented at the 9th International Conference on the Bearing Capacity of Roads, Railways and Airfields, Norway, 2013.
- Cesar Carrasco, Douglas Eng, Kenneth Potocki and Ingrid Mann, "Preliminary Dust-Impact Risk Study For The "Solar Probe" Spacecraft," *Presented at the 2005 Hyper Velocity Impact Symposium*, Lake Tahoe, October, 2005.
- Cesar Carrasco, Octavio Melchor-Lucero, Roberto Osegueda, Luis Espino and Alvaro Fernandez, "Damage Lethality Comparison of Spherical and Cylindrical Projectiles Impacting on a System of Bumper Plates", *Presented at the 2005 Hyper Velocity Impact Symposium*, Lake Tahoe, October, 2005.
- K. A. Potocki, D. A. Eng, D. J. McComas, H. M. Maldonado, R. F. Conde, D. G. Drewry, Y. Guo, T. J. Hartka, D. E. King, B. J. Labonte, D. S. Mehoke, A. G. Santo, H. B. Sequiera, R. M. Vaughan, M. J. Wirzburger, C. J. Carrasco, "Solar Probe Engineering Concept", Presented at "*Solar Wind 11 SOHO 16 Connecting Sun and Heliosphere*" conference, Whistler, Canada, 2005.
- Cesar J. Carrasco, Carlos M. Ferregut, Robert Warke and Ben H. Thacker, "A Monte Carlo Approach to Sampling-Frequency Optimization and its Application to Pipeline Inspection" *9th ASCE Specialty Conference on Probabilistic Mechanics and Structural Reliability*, July 2004, Albuquerque, New Mexico.
- C. Carrasco , O. Melchor-lucero , R. Osegueda , L. Espino and A. Fernandez, "Damage Characterization On Bumper Plates When Subjected To Hypervelocity Impacts," *Seventh U.S. National Congress On Computational Mechanics*, Albuquerque, July 2003.
- Carrasco, C., Huerta, M., Carrera, G., Faciano, A., Williams, P. D., Duton, D. S., "Evaluation of High Temperature Composites in Air-Interceptor-Missile Control Surface Applications," *National Space and Missile Materials Symposium*, San Diego, June 2003.
- C. Carrasco and Huerta M., "Characterization of Composite Materials in Control Surface Applications," *Proceedings of the MSTN/MPTN Materials Processes Conference*, El Segundo California, October 2002.
- J. Eftis, C. Carrasco and R.A. Osegueda, "Modeling Shock Compression, Material Damage and Fracture Caused by Hypervelocity Impact," *Proceedings of the 10th International Congress of Fracture*, Honolulu, Hawaii, Dec. 2001.
- Pereyra, L.R., Osegueda, R.A., Carrasco, C., Ferregut, C. M., "Structural Defects Detection Using Low Frequency Modal Testing with a Laser Vibrometer," *Proc. ASNT Fall 1998 Conference*, The American Society of Nondestructive Testing, Columbus, OH, Oct. 1998, pp 63-66.
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Memberships

- American Society of Civil Engineers
Committee Member: Advanced Materials and Structures
- American Concrete Institute
- Structural Engineers Association of Texas
- Hypervelocity Impact Society

Administrative Service

Since Sep 2009

Chair, Department of Civil Engineering

Since Jul 2007

Director, FAST Center

Since Nov 2013

Research, Education, and Outreach Committee Member (REOC)

Southern Plains Transportation Center (SPTC)

Since July 2013

Transportation Research Board University Representative

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