Macan Doroudian

PhD, PE, GE

Senior Managing Consultant

As Senior Managing Consultant Dr. Doroudian has about 30 years of experience in the fields of civil engineering, geotechnical, foundation, water resources and earthquake engineering.

Prior to joining ESi, in 2018, he worked on assessment of earthquake damage for residential and commercial buildings, design water retention and detention systems such as levees and dams, assessment of levees and dams failure, evaluate slope failures, evaluated excavation and retaining wall failures, evaluate earth-movement, soil settlement, hydrocollapse and expansive soil heave induced damage, evaluate flood induced damage, flood hazard evaluation, perform advance soil mechanics laboratory testing, and evaluate geotechnical and flood control structural systems. He has also acted as part-time faculty to teach civil engineering undergraduate and graduate courses at the University of California, Los Angeles (UCLA).

Since joining ESi, Dr. Doroudian has been active in investigations involving landsliding, wildfire damage, flood hazard assessment, perform hydrological and hydraulics evaluation, soil characterization, ground movement and settlement, horizontal directional drilling damage, pipeline damage assessment, seismic ground motion evaluation, seepage evaluation, and perform active landslide repair and construction.

Dr. Doroudian is active in many technical and professional societies and has published over 50 articles in refereed journals and conference proceedings.

Education

Ph.D., Geotechnical Engineering, University of California, Los Angeles (UCLA), 1997

M.S., Geotechnical Engineering, University of California, Los Angeles (UCLA), 1993

B.S., Structural Engineering, University of California, Los Angeles (UCLA), 1991

Licenses & Certifications

- State of California P.E. License 62177

Contact Information

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ESi Santa Ana

Areas of Specialization

- Geotechnical Engineering
- Flood Hazard Evaluation
- Pipeline Damage Assessment
- Wildfire Investigations
- Earth Movement
- Commercial and Residential Structures
- Flood Water Sediment Transport
- Civil & Structural Engineering
- Storm Damage Investigation
- Construction Vibration and Damage Assessment
- Dam and Embankment Levee Evaluation
- Geotechnical Field and Laboratory Testing
- Ground Motion and Seismic Hazards
- Earth Movement, Landslides, and Slope Stability
- Retaining Structures
- Subsurface Pipe Leaks and Moisture Intrusion

- State of Arizona P.E. License 51184
- State of California Geotechnical Engineer License 2815
- State of Nevada P.E. License 031086
- State of Colorado P.E. License 0062076
- State of Oklahoma P.E. License 34032

Positions Held

Engineering Systems Inc., Orange County, California

- Senior Managing Consultant, 2018–Present

Exponent, Inc., Irvine, California

- Managing Engineer, 2001–2018

Bing Yen and Associates, Irvine, California

- Project Manager, 1998–2001

University of California, Los Angeles

- Post-doctoral Fellow, 1996-1997

Professional Affiliations/Honors

American Society of Civil Engineers (ASCE)

- Member since 2003

ASCE Geo-Institute (G-I) Los Angeles Chapter

- Chair, (2023-2024)
- Member since 2017

ASCE/EWIR Standards Committee – KSTAT (Saturated Hydraulic Conductivity)

- Member since 2006

Earthquake Engineering Research Institute (EERI)

- Member since 2019

Association of State Dam Safety Officials (ASDSO)

- Member since 2014

American Society of Civil Engineers (ASCE) San Diego Section

- Trieste Drive Emergency Slope Repairs – Outstanding Geotechnical Project Award, 2025

El Camino College, Los Angeles

- Academic Achievement in Mathematics, Science and Mathematics Division, El Camino College, 1987.

University of California, Los Angeles (UCLA)

- Part-time Faculty, Department of Civil and Environmental Engineering, University of California, Los Angeles, 1997-2020

Project Experience

Investigations

Construction

- Performed site-specific investigation and design of hundreds of monopole towers and several multi-leg towers for the cellular telephone industry. The design tasks involved field investigation and borings, laboratory testing, analysis of shallow and deep foundation for seismic and wind loads, seismic hazard evaluation, static and seismic slope stability analysis, liquefaction analysis, analysis of design parameters for retaining walls, site grading preparation and earthwork recommendations, and construction observations and inspection of foundation during placement of reinforcement and concrete slurry for AT&T, T-Mobile, Sprint, and American Towers Cell Tower Design, 1999 – 2001.
- Performed geotechnical investigation, seismic design, foundation evaluation and earthwork grading and field observations during construction overexcavation and compaction for the Long Beach Fleet Center, California, 2000
- Performed various design and construction tasks for the Lubrizol Deer Park chemical plant located in Deer Park, Texas, 2019-2021. Tasks included site characterization, analysis of the short-term undrained stability of banks during construction, analysis of long-term drained stability of the channel banks during the life of project, assessment of rapid drawdown seepage conditions and stability, design of the size and type of sheet pile wall to have sufficient capacity to withstand the design moment and shear loads, evaluating the performance of the sheet pile with respect to corrosion during the life of project, design of the sheet pile wall drainage system, and providing engineering services during construction.
- Performed slope stability analysis, prepared a summary report, designed repair, logged caissons, and oversaw field construction activities for the Trieste landslide repair, 2024.

Dam Safety

- Performed various tasks for a stormwater detention basin in Sand Canyon, Simi Valley, California, 2000. Tasks included field investigation and soil sampling, site characterization, development of seepage flow paths and flow nets, evaluation of potential for piping and high exit gradients, determination of shear strength of subsurface and compacted fill material, long-term static and seismic settlement assessment, ground motion evaluation, liquefaction analysis, static and seismic slope stability assessment under steady-state seepage and maximum flood elevation condition, and compaction quality control during construction of the 475-foot-long by 24 foot- high embankment

- Performed design tasks involving geotechnical site characterization, seepage and slope stability evaluation, inlet/outlet hydraulic structures, landfill settlement, sediment erosion evaluation, and report preparation for the design of a large stormwater detention dam at the Sunrise Mountain Landfill, Las Vegas, Nevada, 2002.
- Investigated catastrophic failure of the Ka Loko Dam, Kauai, Hawaii, 2006. Logged borings, performed geotechnical site characterization, supervised soil laboratory testing, performed seepage and slope stability modeling, and hydraulic dam breach analysis.

Landslides and Slope Stability

- Evaluated the cause and contributing factors to the catastrophic La Conchita Landslide, Ventura County, California, 2005.
- Performed geotechnical site characterization, evaluated hydrologic/rainfall evaluation, performed slope static slope stability analysis, Oso Landslide investigation, Oso, Washington, 2014.
- Characterized a landslide below Trieste Drive in Carlsbad, California, by means of subsurface investigation, installation and monitoring of inclinometers and piezometers, laboratory testing, evaluation of seepage conditions, slope stability analysis, and assessment of the cause and origin of the landslide, 2020-2024.

Pipeline Safety

- Investigated slope failure-induced oil pipeline rupture, Pyramid Lake, CA, 2006. Evaluated rainfall records, , performed slope stability analysis, and prepared a summary report.
- Investigated slope failure-induced gas pipeline rupture near Pittsburgh, PA, 2020-2024. Evaluated construction methods, rainfall records, and historical patterns of landslide activity, developed maps and cross sections, performed slope stability analysis, and prepared a summary report.
- Investigated causes of oil pipeline failure, Weld County, Colorado, 2025. Evaluated small-strain soil characteristics, modeling of pipeline bending and fatigue performance resulting from both internal oil pressure pulses and external traffic loading.

Retaining Walls

- Site characterization to evaluate the stability of slopes above the channel during construction, performed stability analysis for various retaining wall systems that included soil nailed walls, cantilever walls, and tieback walls for Segunda Deshecha Flood Control Channel, San Clemente, California, 1999-2000
- Washington Avenue bridge seismic retrofit, Los Angeles, California, 2001. Investigated potential for bridge abutment failure due to strong seismic shaking and provided stabilization recommendations for the bridge founded on silty and sandy soils.
- Investigation of MSE wall failures, oil sands facility, northern Alberta, Canada, 2021. Reviewed construction records, wall design, finite element analysis of key components, boreal winter construction methods, weather records, and timing of failure to determine probable root cause of failures.

Flood Hazards

- Indian Bend Wash, Scottsdale, AZ, 2008. Performed hydrological, hydraulic, and geotechnical evaluation of existing flood control levee system and provided design recommendations to assist local flood control district levee accreditation efforts.
- AT&T telecommunication facility, Palmdale, California, 2019. Evaluated the flood hazard potential associated with the construction of the subject facility during the design storm and assessed the combined soil and hydraulic lateral design pressures associated with the 100-year storm event on the subject enclosure. Evaluated the potential magnitude of changes in water surface elevation resulting from construction of the facility and its effect on surrounding properties.
- Rey Wildfire Damage Assessment, Santa Barbara County, California, 2021. Performed field investigation, aerial photo analysis, terrain analysis, and rainfall analysis to evaluate the effects of the wildfire on Forest Service roads in and adjacent to the fire area.

Publications

"The Eureka Valley Landslide: Evidence of a Dual Failure Mechanism for a Long-Runout Landslide." Shaller PJ, **Doroudian M**, Hart MW. Lithosphere 2020; (1): 1–26. doi: https://doi.org/10.2113/2020/8860819. Extended version: https://www.engsys.com/media/1043-eureka-valley-lithosphere-8860819-extended.pdf

"Estimation of aquifer hydraulic properties by inverse numerical model of aquifer pumping tests." Loaiciga HA, et al. ANSI/ASCE/EWRI 70-19. ASCE Press, Reston, VA, 2020.

"July 2019 Ridgecrest earthquake sequence observations from a post-earthquake reconnaissance. " Cydzik K, Shaller P, **Doroudian M**, Jirschefske J. ESi White Paper, California, December 2019.

"Standard guideline for calculation of the saturated hydraulic conductivity of fine-grained soils." Loaiciga HA, et al. ASCE/EWRI Standard 65-2017, ASCE Press, Reston, VA, 2017.

"Rapid In Situ Conversion of Late-Stage Volcanic Materials to Halloysite Implicated in Catastrophic Dam Failure, Hawaii." Shaller P, Sykora D, **Doroudian M**, Churchman GJ. Clay Minerals 2016; 51: 499–515.

"Conceptual site model for Newark Bay – Hydrodynamics and sediment transport." Shrestha PL, Su SH, James SC, Shaller PJ, **Doroudian M**, Firstenberg CE, Thompson CT. Journal of Marine Science and Engineering 2014; 2(1): 123–139.

"Estimating the storm surge recurrence interval for Hurricane Sandy." Shrestha PL, James SC, Shaller PJ, **Doroudian M**, Peraza DB, Morgan TA. Proceedings, World Environmental and Water Resources Congress 2014: Water Without Borders, Environmental Water Resources Institute of ASCE, Portland, OR, pp. 1906–1915, 2014

"The 2005 La Conchita landslide, California: Part 1 – Geology." Shaller PJ, Shrestha PL, **Doroudian M**, Sykora D, Hamilton D. In: 5th International Conference on Debris-Flow Hazards Mitigation, Padua, Italy, June 14–17, 2011. Italian Journal of Engineering Geology and Environment, 2011; 745–750.

“The 2005 La Conchita landslide, California: Part 2 – Modeling.” Shrestha PL, Shaller PJ, **Doroudian M**, Sykora D, Hamilton D. In: 5th International Conference on Debris-Flow Hazards Mitigation, Padua, Italy, June 14–17, 2011. Italian Journal of Engineering Geology and Environment, 2011; 751–758.

"Cyclic Compression of Compacted Clayey Sand at Small Cyclic Strains." Vucetic M, **Doroudian M**, Sykora DW. Proceedings, Fifth International Conference on Recent Advances in Geotechnical Engineering and Soil Dynamics, pp. 699–706, San Diego, CA, May 24–29, 2010.

"Standard guideline for geostatistical estimation and block-averaging of homogeneous and isotropic saturated hydraulic conductivity." Loaiciga HA, et al. ASCE/EWRI Standard 54-2010, ASCE Press, Reston, VA, 2010.

"Flood hazard analysis and mitigation." Shrestha PL, Hamilton DL, Cydzik K, Wardak S, Jordan N, Shaller PJ, **Doroudian M**. Proceedings, International Conference on Water, Environment, Energy and Society (WEES-2009), pp. 699–706, New Delhi, India, January 12–16, 2009.

"Sedimentation analysis for existing and proposed development conditions." Murillo B, Wardak S, Hamilton DL, Shrestha PL, Cydzik K, **Doroudian M**. Proceedings, International Conference on Water, Environment, Energy and Society (WEES-2009), pp. 1636–1641, New Delhi, India, January 12–16, 2009.

"Standard guideline for fitting saturated hydraulic conductivity using probability functions." Loaiciga HA, et al. ASCE/EWRI Standard 50-2008, ASCE Press, Reston, VA, 2008.

"Standard guideline for estimating the effective saturated hydraulic conductivity." Loaiciga HA, et al. ASCE Standard 51-2008, ASCE Press, Reston, VA, 2008.

“Estimating site-specific strong earthquake motions.” Heuze FR, Archuleta RA, Bonilla F, Day SM, **Doroudian M**, et al. Soil Dynamics and Earthquake Engineering 2004; 24(3): 199–223.

“Strong earthquake motion estimates for three sites on the U.C. San Diego Campus.” Day S, **Doroudian M**, Elgamal A, Gonzales S, Heuze F, Lai T, Minster B, Ogelsby D, Riemer M, Vernon F, Vucetic M, Wagoner J, Yang Z. LLNL Report, UCRL-ID-140523, 51 p., May 2002.

"Kinematics and failure of soil-nailed excavation models in dynamic centrifuge tests." Vucetic M, Kocijan J, **Doroudian M**. Proceedings, International Symposium on Landmarks in Earth Reinforcement, Fukuoka, Japan, A.A. Balkema Publisher, Vol. 1, pp. 737–742, 2001.

"Small-strain cyclic behavior of Augusta clay in simple shear." Lanzo G, **Doroudian M**, Vucetic M. Proceedings, 2nd International Symposium on Pre-failure Deformation Characteristics of Geomaterials (IS Torino ’99), A.A. Balkema, Vol. 1, pp. 213–219, September 1999.

“Results of geotechnical laboratory tests on soil samples from the UC San Diego Campus.” Vucetic M, **Doroudian M**, Matesic L. Report for the University of California Campus-Laboratory Collaboration (CLC) Program, UCLA Research Report No. ENG-99-203, Civil and Environmental Engineering Department, University of California, Los Angeles, 110 p., May 1999.

“Effect of the shape of cyclic loading on damping ratio at small strains.” Vucetic M, Lanzo G, **Doroudian M**. Soils and Foundations 1998; 38(1): 111–120.

“Reduction of shear modulus at small strains in simple shear.” Lanzo G, Vucetic M, **Doroudian M**. ASCE Journal of Geotechnical and Geoenvironmental Engineering 1997; 123(11): 1035–1042.

“Methodologies for evaluating the socio-economic consequences of large earthquake.” King S, Kiremidjian A, Basoz N, Law K, Vucetic M, **Doroudian M**, et al. Earthquake Spectra 1997; 13(4): 565–584.

“A direct simple shear device for measuring small-strain behavior." **Doroudian M**, Vucetic M. ASTM Geotechnical Testing Journal 1995; 18(1): 69–85.

“Results of geotechnical laboratory tests on soil samples from the UC Santa Barbara Campus.” **Doroudian M**, Vucetic M. Report for the University of California CLC Program research project “Estimation of the Ground Motion Exposure from Large Earthquakes at Four UC Campuses in Southern California,” UCLA Research Report No. ENG-99-203, Civil and Environmental Engineering Department, UCLA, 107 p., April 1999.

“Results of cyclic and dynamic simple shear tests on soils from the La Cienega Site conducted for ROSRINE project and other research purposes.” Vucetic M, Hsu CC, **Doroudian M**. UCLA Research Report No. ENG-98-200, Civil and Environmental Engineering Department, University of California, Los Angeles, 440 p., December 1998.

“Damping ratio at small strains in simple shear test.” Vucetic M, Lanzo G, **Doroudian M**. ASCE Journal of Geotechnical and Geoenvironmental Engineering 1998; 124(7): 585–594.

“Development of 3-D geotechnical database and its application to the evaluation of nonlinear site effects and seismic zonation." **Doroudian M**, Vucetic M. Research Report No. ENG 97-186, Civil and Environmental Engineering Department, University of California, Los Angeles, 347 p., September 1997.

“Task H-5: Geotechnical site database for Southern California.” Vucetic M, **Doroudian M**. Final Report to the Southern California Earthquake Center at USC, Civil and Environmental Engineering Department, University of California, Los Angeles, Vol. I–III, 1546 p., October 1995.

“Methodologies for evaluating the socio-economic consequences of large earthquakes.” **Doroudian M** (with Kajima–CUREe, 24 authors). Year Two Report of the Kajima–CUREe Joint Project, Kajima Corporation Research Institute, Tokyo, Japan, 1995.

“Task H-5: Geotechnical site database for Southern California.” Vucetic M, **Doroudian M**. Second-Year Annual Report to the Southern California Earthquake Center at USC, Civil and Environmental Engineering Department, University of California, Los Angeles, 255 p., May 1994.

“A direct simple shear device for measuring small-strain behavior of soil.” **Doroudian M.**, Vucetic M. Research Report No. ENG 93-185, Civil and Environmental Engineering Department, University of California, Los Angeles, 129 p., June 1993.

“Dynamic centrifuge testing of soil nailed excavations.” Vucetic M, Tufenkjian MR, **Doroudian M**. ASTM Geotechnical Testing Journal 1993; 16(2): 172–187.

“Dynamic centrifuge testing of soil-nailed excavations — Testing program and procedure.” Vucetic M, Tufenkjian MR, **Doroudian M**. Research Report No. ENG 92-180, Civil and Environmental Engineering Department, University of California, Los Angeles, 50 p., June 1992.

Presentations

"Evaluating sediment dynamics in waterways." Shrestha PL, Shaller PJ, **Doroudian M**, Cydzik K. Proceedings, 10th International Conference on Scour and Erosion (ICSE-10), pp. 237–250, October 18–21, 2021 (Virtual).

"Construction, Operation, and Failure of Ka Loko Dam, Kauai, Hawaii." Shaller PJ, **Doroudian M**, Cydzik K, Shrestha P. Association of Engineering Geologists 2020 Annual Meeting, Dams and Levees Lessons Learned Symposium, Part 1, September 17, 2020.

"Post-fire planning, policy, and natural hazards mitigation: lessons learned during recovery from wildfires in the state of California, USA, 2015–2019." Cydzik K, Shaller PJ, Shrestha P, **Doroudian M**. American Geophysical Union 2019 Fall Meeting, San Francisco, CA, December 9–13, 2019.

“An evaluation of post-wildfire mitigation measures on flood hazard potential in Southern California." Shaller PJ, Wren J, Shrestha PL, Sama M, **Doroudian M**. Poster, World Environmental and Water Resources Congress 2014: *Water Without Borders*, Environmental Water Resources Institute of ASCE, Portland, OR, 2014.

"Conceptual Site Model for Newark Bay – Hydrodynamics and Sediment Transport." Shrestha PL, Su SH, James SC, Shaller PJ, **Doroudian M**, Firstenberg CE, Thompson CT. Presented at the 13th International Conference on Estuarine and Coastal Modeling, San Diego, CA, November 4–6, 2013.

"Assessment of flood hazard, Travertine Point Area, Southeastern California." Shaller PJ, Shrestha PL, **Doroudian M**, Rezakani M. Presented at the 2010 Floodplain Management Association Annual Meeting, Henderson, NV, November 3, 2010.

"The January 10, 2005 La Conchita landslide." Shaller PJ, Shrestha PL, **Doroudian M**, Hamilton DL, Sykora DW. Presented at the 2010 Geological Society of America Cordilleran Section and Pacific Section AAPG Meeting, Anaheim, CA, May 29, 2010.

"Sedimentation analysis in an open channel network for existing and proposed development conditions." Wardak S, Murillo B, Hamilton D, Shrestha PL, **Doroudian M**, Cydzik K, Medellin J, Shaller PJ. Poster, ASCE–EWRI World Environmental & Water Resources Conference, Honolulu, HI, May 12–16, 2008

"Inland flood hazard analysis and mitigation." Shrestha PL, Hamilton D, Jordan N, Lyle JE, **Doroudian M**, Shaller PJ, Wardak S, Cydzik K, Medellin J. Poster, ASCE–EWRI World Environmental & Water Resources Conference, Honolulu, HI, May 12–16, 2008.

"Analysis of flood hazards for a residential development." Shrestha P, Hamilton D, Lyle J, **Doroudian M**, Shaller P. Proceedings, ASCE World Environmental and Water Congress, Tampa, FL, May 15–19, 2007.

"A three-dimensional model for Lake Sam Rayburn, Texas." Shrestha P, Bigham G, Hamilton D, **Doroudian M**. Proceedings, ASCE International Perspective on Environmental and Water Resources, New Delhi, India, December 18–20, 2006.

"Flood hazard analysis and protection plan for a residential development." Hamilton D, Shrestha P, Lyle J, **Doroudian M**, Shaller P. Proceedings, ASCE World Environmental and Water Resources Congress, Omaha, NE, May 21–25, 2006.

"Investigation of flood and debris flow recurrence — Andreas Canyon, San Jacinto Range, Southern California." Shaller P, Hamilton D, Shrestha P, Lyle J, **Doroudian M**. Proceedings, ASCE World Environmental and Water Resources Congress, Omaha, NE, May 21–25, 2006.

"Investigation of flood hazards on alluvial floodplains." Shaller P, Hamilton D, **Doroudian M**, Shrestha P, Lyle J, Cattarossi A. Proceedings, ASCE World Water and Environmental Resources Congress, Anchorage, AK, May 16–19, 2005.

"Impact of sewage line spills on pathogen levels in recreational waters." Shrestha P, Hamilton D, Jordan N, **Doroudian M**, Hong S, Proctor D. Proceedings, ASCE World Water and Environmental Resources Congress, Anchorage, AK, May 16–19, 2005.

"Investigating flood hazards on alluvial floodplains." Hamilton D, Shaller P, Shrestha P, Lyle J, **Doroudian M**. Presentation, Alluvial Fan Flood Hazard Management Symposium, Phoenix, AZ, April 20–22, 2005.

"Multi-disciplinary approach to distinguishing flood hazards on alluvial floodplains." Hamilton D, Shaller P, Lyle J, **Doroudian M**, Shrestha P. Presentation, Arid Regions 10th Biennial Conference, Restoration and Management of Arid Watercourses, Mesa, AZ, November 16–19, 2004.

"Interpretation of tectonic, fluvial, and eolian landforms in the Upper Coachella Valley, California, using aerial photography, DEM, and LiDAR technology." Shaller P, Hamilton D, Lyle J, **Doroudian M**, Shrestha P, Cattarossi A. Poster Presentation, Geological Society of America Annual Meeting, Denver, CO, November 7–10, 2004.

"Fire-flood-erosion sequence: Analysis and mitigation." Shaller P, Hamilton D, Lyle J, **Doroudian M**, Shrestha P. Presented at ASFPM Arid Regions 10th Biennial Conference, Mesa, AZ, November 2004.

"Multi-disciplinary approach to distinguishing flood hazards on alluvial floodplains." Shaller P, Hamilton D, Lyle J, **Doroudian M**, Shrestha P. Presented at ASFPM Arid Regions 10th Biennial Conference, Mesa, AZ, November 2004.

"Double specimen direct simple shear device for measuring small-strain behavior." **Doroudian M.** Invited instructor at University of Rome, Rome, Italy, November 2002.

"Small-strain testing in an NGI-type direct simple shear device." **Doroudian M**, Vucetic M. Proceedings, XI Danube-European Conference on Soil Mechanics and Foundation Engineering, Poreč, Croatia, May 1998.

"Integration of 3-D geotechnical database for Los Angeles and 1-D nonlinear site response model into a GIS for seismic microzonation." **Doroudian M**, Vucetic M. Proceedings, Northridge Earthquake Research Conference, 42 p., Los Angeles, CA, August 1997.

"Densification of the SCEC geotechnical database and its integration with a nonlinear site response model in a GIS environment." Vucetic M, **Doroudian M**. Proceedings, Southern California Earthquake Center 1997 Annual Meeting, p. 61, Costa Mesa, CA, 1997.

"Cyclic engineering properties of soil at small strains in simple shear device." **Doroudian M**, Vucetic M. Poster Session, UC/CLC Earthquake Workshop, San Ramon, CA, March 1997.

"Methodology for utilization of SCEC Geotechnical Database to assess nonlinear site response." **Doroudian M**, Vucetic M. Poster Session, Southern California Earthquake Center Annual Meeting, Palm Springs, CA, October 1996.

"Methodology for utilization of SCEC geotechnical database to assess nonlinear site response." Vucetic M, **Doroudian M**. Proceedings, Southern California Earthquake Center 1996 Annual Meeting, pp. 44–45, Palm Springs, CA, 1996.

"Development of 3-Dimensional geotechnical database for Los Angeles seismic microzonation." **Doroudian M**, Vucetic M, Martin GR. Proceedings (CD-ROM), 11th World Conference on Earthquake Engineering, Elsevier, Paper No. 2148, Acapulco, Mexico, 1996.

"Development of geotechnical database for Palo Alto and its utilization for seismic microzoning." Iskandar V, **Doroudian M**, Vucetic M. Proceedings (CD-ROM), 11th World Conference on Earthquake Engineering, Elsevier, Paper No. 2148, Acapulco, Mexico, 1996.

"Centrifuge testing of the failure mechanism of soil-nailed excavations under dynamic loads." Vucetic M, Iskandar V, **Doroudian M**, Luccioni L. Proceedings, International Symposium on Earth Reinforcement, A.A. Balkema Publisher, Vol. 1, pp. 829–834, Fukuoka, Japan, 1996.

"Development of geotechnical database for Los Angeles." **Doroudian M**, Vucetic M, Martin GR. Proceedings, 1995 Annual Conference of the International Association for Mathematical Geology and the International Symposium for Geoinformatics, Session IV, pp. 161–163, Osaka, Japan, 1995.

"Development of geotechnical database for Los Angeles and its potential for seismic microzonation." **Doroudian M**, Vucetic M, Martin GR. Proceedings, 5th International Conference on Seismic Zonation, Vol. II, pp. 1512–1514, Nice, France, October 1995.

"Development of geotechnical site database for Southern California for seismic microzonation." Vucetic M, **Doroudian M**, Martin GR. Proceedings, 3rd Annual Caltrans Seismic Workshop, Sacramento, CA, June 1994.

"Methodology for utilization of SCEC Geotechnical Database to assess nonlinear site response." **Doroudian M**, Vucetic M. Taisei Institute of Construction Technology, Taisei Corporation, Yokohama, Japan, November 1994.

"Small-strain behavior of soils in direct simple shear." **Doroudian M.** Institute of Industrial Science, Tokyo University, Tokyo, Japan, June 1994.

"Utilization of geotechnical database for seismic microzonation." **Doroudian M.** Kajima Institute of Construction Technology, Kajima Corporation, Tokyo, Japan, June 1994.

"Development of geotechnical database for Palo Alto and its utilization for seismic microzoning." **Doroudian M.** CUREe-Kajima Annual Meeting, California Institute of Technology, Pasadena, CA, October 1994.

"Integration of 3-D geotechnical database of Los Angeles and 1-D nonlinear site response model into a GIS for seismic microzonation." **Doroudian M**, Vucetic M. Proceedings, NEHERP Conference and Workshop on Research on the Northridge, California Earthquake of January 1994, CUREe, Richmond, CA, Vol. II (Earth Sciences), pp. 189–198.

"Geotechnical database for Southern California." **Doroudian M**, Vucetic M. NSF Workshop on Scientific Supercomputing, Visualization, and Animation in Geotechnical Earthquake Engineering and Engineering Seismology, Carnegie Mellon University, November.

"Development of geotechnical site database for Southern California." **Doroudian M**. Poster Session, NSF/USGS 3rd-Year Review Site Visit of the Southern California Earthquake Center, University of Southern California, Los Angeles, September 1993.

“Seismic stability of soil nailed excavations." **Doroudian M**, Tufenkjian MR. Poster, EERI Annual Meeting, San Francisco, CA, 1991.

"Stability of soil-nailed excavations." Tufenkjian MR, Vucetic M, **Doroudian M**. Proceedings, International Workshop on Technology for Hong Kong's Infrastructure Development, *Infrastructure ’91*, pp. 751–762, Hong Kong, 1991.