

9th TURKISH CONFERENCE ON EARTHQUAKE ENGINEERING

PROGRAM

2 JUNE 2021, WEDNESDAY

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| 10:00-11:15 | Opening Session – Hall A | | |
| 10:00-10:10 | Music Recital , <i>Piano</i> : Ceyda Pirali – <i>Violin</i> : Başak Elkutlu | | |
| 10:10-10:15 | Technical Information about Conference Links and Parallel Sessions | | |
| 10:15-10:45 | Opening Speeches | | |
| | Nusret Suna (<i>Chair, Turkish Chamber of Civil Engineers Istanbul Branch – Co-chair of the Conference</i>) | | |
| | Alper İlki (<i>Vice Chair, Turkish Earthquake Foundation Earthquake Engineering Committee - Co-chair of the Conference</i>) | | |
| | Mustafa Erdik (<i>Chair, Turkish Earthquake Foundation</i>) | | |
| | Taner Yüzgeç (<i>Chair, Turkish Chamber of Civil Engineers</i>) | | |
| 10:45-11:15 | Chair : Atilla Ansal Prof. Dr. Rifat Yazar Lecture : İ. Kutay Özyaydın <i>“The Development of Geotechnical Earthquake Engineering in Turkey”</i> | | |
| 11:15-11:30 | Break | | |
| 11:30-12:00 | Session 1 – Hall A | | |
| | Chair : Haluk Sucuoğlu | | |
| 11:30-12:00 | Keynote Lecture : Mustafa Erdik <i>“Seismic Isolation in Turkey”</i> | | |
| 12:00-12:45 | Break | | |
| 12:45-14:50 | Session 2 – Hall A | | |
| | Chair : Sinan Akkar | | |
| 12:45-13:15 | Keynote Lecture : Vitor Silva <i>“Recent Applications and Future Trends in Probabilistic Seismic Risk Assessment”</i> | | |
| | Session 2a – Hall A <i>Earthquake Resistant Building Design</i> | Session 2b - Hall B <i>Analysis of Structural Members and Systems</i> | Session 2c - Hall C <i>Geotechnical Earthquake Engineering</i> |
| | Chairs : Cemalettin Dönmez & Cüneyt Tüzün | Chairs : Kutlu Darılmaz & Korhan Dalgıç | Chairs : Özer Çinicioğlu & Gökçe Tönük |
| 13:20-13:35 | Rapid evaluation of health of structural components using acoustic emission data in conjunction with finite element analysis tools (EN) Valter Luiz Jantara Junior, Mayorkinos Papaefias | Collapse Estimation of Generic Planar Mid-Rise RC Structure with Fragility Curve (EN) Onur Onat, Burak Yön | The Effect of Local Soil Conditions and Ground Motions on the Dynamic Response of a Trapezoidal Valley Model (EN) Bilal Özaslan, M. Emre Haşal, Tolga Y. Özudoğru, Recep İyisan |
| 13:35-13:50 | Nonlinear Analysis of a Building Under a New Lateral Seismic Load (EN) Imane Djafar-Henni, Amar Kassoul | Modal Shape and Frequency Evaluation of Two-Leaf Cavity Infill Walls by means of Macro Modeling Approach (EN) Onur Onat, Bartolomeo Panto | Sensitivity of Spatial Variable Seismic Ground Motion to Multiple Local Site Conditions (EN) Rachid Derbal, Nassima Benmansour, Mustapha Djafour, Mohammed Matallah, Salvador Ivorra |
| 13:50-14:05 | Development of a Software for the Vulnerability Analysis of a Moment Resisting Steel Frame Building (TR) Abdurrahman Akcan, Ahmet Anıl Dindar, Seyhan Okuyan Akcan | Investigation of P-M Interaction and Wall Neutral Axis for Concrete Filled Composite Plate Shear Walls with Different Geometries (EN) Erkan Polat | The Effect of Impermeable Layer Thickness on Liquefaction Potential (TR) Nesil Özbakan, Burak Evrigen, Mustafa Tuncan |
| 14:05-14:20 | Influence of Post-Yield Strength on Splice Demands in Steel Special Moment Frames (EN) Onur Şeker | Numerical modelling of post-fire seismic behavior of RC columns using OpenSees framework (EN) Uğur Demir, Alihan Baltacı, Alper İlki | Behavior of Rectangular Embedded Structures During Earthquake (TR) S. Tuğba İleri, Berna Unutmaz |
| 14:20-14:35 | Seismic Performance of Special Concentrically Braced Frames Designed According to Turkish Seismic Codes 2007 and 2018 (EN) Ömer Asım Şişman, Onur Şeker, Bülent Akbaş, Mahmoud Faytarouni, Jay Shen | Nonlinear Investigation of the Short Column Effect for Confined Walls Under Cyclic Loading (EN) Sedat Kömürçü | Soft Soil Effect on the Formation of Impulsive Signals in Earthquake Ground Motions (EN) Hadi Khanbabazadeh, Saeed Moghimi, Kaveh Dehghanian |
| 14:35-14:50 | Seismic Performance Evaluation of Steel X-Braced Frames per the Turkish Building Earthquake Code 2018 (EN) Efecan Kor, Yigit Ozcelik | Efficiency of Horizontal Reinforcement in L-Shaped Reinforced Concrete Shear Walls (TR) Mehmet Hasnalbant | Deterministic Seismic Hazard Analysis of Burdur City Center (TR) Mehmet Alpyürür, Musaffa Ayşen Lav |

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| 14:50-15:00 | Break | | |
| 15:00-17:05 | Session 3 – Hall A Chair: Alper İlki Theme Lecture: Kutay Orakçal <i>“Behavior and Modeling Reinforced Concrete Structural Walls”</i> | | |
| 15:00-15:30 | | | |
| 15:35-15:50 | Session 3a – Hall A Structural Earthquake Engineering Chairs: Ufuk Yazgan & Ömer Halıcı PGV Based No-Code Mid-Rise Reinforced Concrete Frame-Type Building Fragilities in Istanbul (EN) İbrahim Duran, Sinan Akkar | Session 3b – Hall B Earthquake Ground Motion Chairs: Aysegül Askan & Gökçe Tönük Strong Ground Motion Simulation in a Broad Frequency Range: A Case Study for the 2019 Mw:6.0 Bozkurt-Denizli Earthquake, Turkey (EN) Murat Çalıkoğlu, Gülüm Tanırcan | Session 3c – Hall C Earthquake Resistant Building Design Chairs: Özgür Avşar & Baykal Hancıoğlu Lateral Supporting of Column Caps at Beam-Column Joint Areas of High-Moment Transferring Steel Frames with High Ductility Level (TR) Adem Karasu, Cüneyt Vatansever, Haluk Emre Alçiçek |
| 15:50-16:05 | Development of PGA-Based Pre-Code Reinforced Concrete Frame Building Fragilities for Istanbul (EN) İpek Dolağan, Sinan Akkar | Selection and Scaling of Real Earthquake Records Regarding to Turkish Earthquake Building Code (TEBC) 2018 (EN) Ahmet Anil Dindar, Ulgen Mert Tugsal, Ahu Komec Mutlu | A Strengthening Method for Earthquake Deformations Caused by Industrial Structure-Roof Cover Interaction (TR) Celalettin Kozanoğlu, Onur Merter |
| 16:05-16:20 | An Evaluation of Existing Modal Strain Energy Methods on Damage Localization and Severity (EN) Quy Thue Nguyen, Ramazan Livaoğlu | Investigation of the Ground Motion Directionality: Correlation Between Mainshock and Aftershock Motions (EN) Ziya Muderrisoglu, Ufuk Yazgan | A Capacity Design Approach for Connection Design of Precast Concrete Frame Structures (EN) Cem Özer |
| 16:20-16:35 | Impact of Strain Hardening on Seismic Behavior of Steel Special Moment Frames (EN) Muhammed Ö. Canbulat, Onur Şeker, Mahmoud Faytarouni, Bülent Akbaş, Jay Shen | Comparison of Ground Motion Prediction Equations with Ground Motion Data from Earthquakes in Southern Aegean Area (EN) Aykut Semerci, Ebru Harmandar | Recent Studies on Application of Structural Fuse Concept in Seismic Design of Steel Structures (EN) Borislav Belev, Angel Ashikov, Georgi Bonchev |
| 16:35-16:50 | Vulnerability Analysis of a Bridge Corroded at Different Levels (TR) Gökhan Barış Sakcalı, İsa Yüksel | Epistemic Uncertainties in Probabilistic Earthquake Hazard Models and Their Effects on Results: The Case of Marmara Region (TR) Hülya Yüksel, Karın Şeşetyan | The Effect of Technical, Economic and Social Causes on the Disharmony of Legislation and Practice in Disaster and Emergency Situations in Turkey (TR) Fahri Birinci, Mehmet Fatih Yılmaz |
| 16:50-17:05 | Effects of Seismic and Aerodynamic Loads on a 5 MW Scale Steel Wind Turbine (EN) Elif Altunsu, Onur Güneş, Shokrullah Sorosh, Ali Sarı | Use of 2014-Next Generation Attenuation Relations in Recent Turkey Earthquakes (EN) Seyhan Okuyan Akcan, Abdullah Can Zulfikar | Determination of Earthquake Performance of Tall Building Core Shear Walls According to FEMA P695 for Different Axial Load Ratios (TR) Orhan İlky Ergüneş, Tülay Aksu Özkul |
| 17:05-17:15 | Break | | |
| 17:15-19:35 | Session 4 - Hall A Chair: Mustafa Erdik Theme Lecture: Sinan Akkar <i>“Probabilistic Displacement Demand and Comparison with Current Methods in Seismic Design Codes”</i> | | |
| 17:15-17:45 | | | |
| 17:50-18:05 | Session 4a – Hall A Strengthening of Structures against Earthquakes Chairs: Erdem Canbay & Gülsun Parlar Building Strengthening by Strengthening Brick Infill Walls with Fiber Polymers: Exemplar Application (TR) Şevket Özden, Onur Ertaş, Özlem İmren, Sinan Çetin | Session 4b – Hall B Structural Earthquake Engineering Chairs: Şevket Şenel & Cüneyt Tüzün Residual displacement based damage index for SDOF systems (EN) Müberra Eser Aydemir, Cem Aydemir, Eylem Eyyüpoğlu | Session 4c – Hall C Structural and Geotechnical Earthquake Engineering Chairs: Pelin Tohumcu Özener & Göktürk Önem The Effect of Bedrock Depth on Free Field Analysis and Comparison with Design Spectra According to TSDC 2018 (TR) Onur Deniz, Ozan Alver, E. Ece Eseller-Bayat |
| 18:05-18:20 | Investigation of Cold-formed Steel Concrete Frame Building with Strawbale Infill Panel under Seismic Loading (EN) Joseph Oyeleke, Adeola Adedeji, Olatokunbo Ofuyatan | Comparative Analysis on the Seismic Performance of RC Bridges Piers in Algeria (EN) Fouad Kehila, Mustapha Remki, Abderrahmane Kibboua | Holistic Seismic Performance Models for Industrial Buildings in Turkey (EN) Hasan Numan Ölmez, Derya Deniz |
| 18:20-18:35 | Seismic Retrofit of Operational Buildings Using Dampers (EN) Tolga Onal, Javier Lopez Gimenez, Gen Arakawa | A Sensitivity Study for Seismic Response Assessment of Highway Bridges with Uncertain Modeling, Scour and Deterioration Parameters (EN) Züleyha Kanpara Cıvaş, Onur Cem Aygün, Taner Yılmaz | Evaluation of Electric Arc Furnace (EAF) Slag in Geotechnical Engineering as an Earthquake Resistant Material (EN) Muhammed Mahmudi, Tugba Eskisar, Selim Altun |

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| 18:35-18:50 | Investigation of Period Values of a Strengthened School Building by Free Vibration Records (TR) Selçuk Kaçın, Halil Çağrı Yılmaz, Cemil Velat Çağlar | Comparison of Two Approaches for Developing Analytical Seismic Fragility Curves of Highway Bridges (EN) Onur Cem Aygün, Taner Yılmaz | Comparison of Seismic Behaviors of Earthquake Records Using Amplitude Scaling, Spectral Fit and Stochastic Method on a Fixed Offshore Platform (TR) Servan Duman, Ali Sarı |
| 18:50-19:05 | Strengthening of a Multi-Story Reinforced Concrete Industrial Building by Dampers (TR) Suat Yıldırım, Ali Mahdavi, Yüksel İ. Tonguç | Influence of High Strength Rubberized Concrete on the Energy Dissipation and Seismic Demand of Jacketed RC Structures (EN) Ahmed Habib, Umut Yıldırım, Özgür Eren | Fragility Curves of Simply Supported Prestressed Girders Bridge with Two-Column Bent (EN) Abderrahmane Kibboua, Nadjib Hemaidi-Zourgui, Fouad Kehila, Mustapha Remki |
| 19:05-19:20 | The effectiveness of base isolation for the seismic strengthening of existing R.C buildings in a loss-assessment framework (EN) Andrea Natale, Ciro Del Vecchio, Marco Di Ludovico | Comparison of an RC Flat-Slab and a Frame Building's Dynamic Behavior Utilizing Ambient Vibration Measurements (EN) Canberk Bolat, Hasan Celil Yelken, Onur Kaplan | Lessons Learned From Past Earthquakes for Horizontally Curved Bridges (EN) Esra Namlı, Turgut Öztürk |
| 19:20-19:35 | Earthquake Strengthening Applications of Reinforced Concrete Bridges Using Structural Steel Elements (TR) Esra Namlı, Demir H. Yıldız | The Success of Pre-Assessment Methods in Predicting Earthquake Performance of Reinforced Concrete Buildings (TR) Barış Erdil, Harun Ceylan | Probabilistic Earthquake Hazard Analysis for Kocaeli Province and its Vicinity (TR) Methiye Gündoğdu Gök, Abdullah Can Zülfiyar |
| 3 JUNE 2021 THURSDAY | | | |
| 9:30-10:30 | Session 5 – Hall A | | |
| | Chair: Kemal Önder Çetin | | |
| 9:30-10:00 | Keynote Lecture: Farzad Naeim <i>"Towards Resilient Seismic Design of Structures"</i> | | |
| 10:00-10:30 | Keynote Lecture: Atilla Ansal <i>"Performance Based Geotechnical Earthquake Engineering"</i> | | |
| 10:30-10:50 | Break | | |
| 10:50-12:05 | Session 6 | | |
| | Session 6a – Hall A <i>Active and Passive Seismic Isolation</i> | Session 6b – Hall B <i>Historic Buildings and Cultural Heritages</i> | Session 6c – Hall C <i>Infrastructure and Foundation Systems</i> |
| | Chairs: Bahadır Şadan & Cüneyt Tüzün | Chairs: Altuğ Erberik & Ömer Halıcı | Chairs: Eren Uçkan & Gökçe Tönük |
| 10:50-11:05 | Optimization of Seismic Isolation Parameters with Heuristic Algorithms (TR) Ali Erdem Çerçevik, Özgür Avcı | The Relationship of Early Period Reinforced Concrete Building Examples in Turkey with Earthquake: Hennebique System (TR) Onur Ertas, Özlem İmren, Şevket Özden, Merve Çengel | Pipe Damages in the 2011 Christchurch, New Zealand Earthquake and Comparison with Models (TR) Selçuk Toprak, Engin Nacaroglu, Muhammet Ceylan, Gizem Dündar |
| 11:05-11:20 | Design Process of a Base Isolated Hospital Building (EN) Cem Yılmaz, Serdar Soyöz | Numerical Investigation of the Wobbling Response of a Free Standing Multi-drum Column under Harmonic Excitation (EN) Mazen Tabbara, Gebran Karam, Josiane Jello, Charbel Beaino | Investigation of Reinforced Concrete Bridge Pier Behaviors Under the Horizontal and Vertical Components of Earthquake Records (TR) Cem Abanuz, Ufuk Hancılar, Erdal Şafak |
| 11:20-11:35 | O- Shape Flexural Plate Energy Dissipating System (EN) Anila Xhahysa, Sadik Can Girgin, Serap Kahraman | Protection of a 550-Year-Old Mosque Against Flood and Earthquake Risks (TR) Suat Yıldırım, Ali Mahdavi, Alper İlki, Barış Erkuş, Yüksel İ. Tonguç | Effect of Duration of the Cyclic Loads on Offshore Wind Turbine Foundation (EN) Maryam Massah Fard, Ayfer Erken, Bulent Erkmen, Atilla Ansal |
| 11:35-11:50 | Investigation of the Behavior of Horizontal Wide Tanks and Vertical Slender Tanks in Industrial Structures under Earthquake Effects and Their Designs with Different Seismic Isolation Systems (TR) Samet Kılıç, Bülent Akbaş, Eren Uçkan, Ferit Çakır | Investigation of Earthquake Performance of Bursa Hocaalızade Mosque Minaret with Linear and Non-Linear Analysis Approaches (TR) Elif Durgut, Medine İspir, Cem Demir, Ömer Tuğrul Turan, Fikret Kuran, Alper İlki | Effects of Soil-Wall Separation on Static Earth Pressures (EN) Teoman Efeoglu, Dimitris Karamitros, George Mylonakis |
| 11:50-12:05 | Full-Scale Shake Table Test of a Lightweight Three-Story Seismically Isolated Wood Structure (EN) Cem Yenidoğan, Takahiro Takahashi, Takuya Nagae, Takahito Inoue, Koichi Kajiwara | Seismic Damage Assessment of Low rise Confined Masonry Buildings using Incremental Dynamic Analysis (EN) Mustapha Remki, Fouad Kehila, Mebarek Khelfi | The Effect of Soil Structure Interaction on Structural Parameters (TR) Hülagü Ethemoglu, Murat Serdar Kırçıl |
| 12:05-12:45 | Break | | |
| 12:45-14:15 | Session 7 – Hall A | | |
| | Chair: Ahmet Yakut | | |
| 12:45-13:15 | Keynote Lecture: Haluk Sucuoğlu <i>"Ground Motion Scaling for Seismic Performance Evaluation"</i> | | |

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| 13:15-13:45 | Theme Lecture: Katrin Beyer “Seismic Behavior and Modeling of Historical Stone Masonry Walls” | | |
| 13:45-14:15 | Theme Lecture: Ario Ceccotti “Seismic Behavior of Timber Structures” | | |
| 14:15-14:30 | Break | | |
| 14:30-16:35 | Session 8 – Hall A | | |
| 14:30-15:00 | Chair: Hilmi Luş Theme Lecture: Erdal Şafak “Structural Health Monitoring (SHM) in Earthquake Engineering” | | |
| 15:05-15:20 | Session 8a – Hall A Structural Earthquake Engineering Chairs: Serdar Soyöz & Sinem Kolgu | Session 8b – Hall B Earthquake Codes Chairs: Barış Binici & Levent Darı | Session 8c – Hall C Experimental Studies Chairs: Cem Demir & Ömer Halıcı |
| | The Effect of Near and Far Field Earthquakes on Tall Building Behavior (TR) Kemal Beyen | A Comprehensive Study on Damage Limits of Reinforced Concrete Shear Walls (TR) Mahinur Sertkaya, İlker Kazaz | Non-Corrodible GFRP Shear Reinforcement for RC Flat Plates Subjected to Simulated Seismic Load (EN) Mohammed El-Gendy, Ehab El-Salakawy |
| 15:20-15:35 | Reliability Analysis of Steel Structures Under Random Base Excitation (EN) Masoud Negin | Evaluation of Non-Linear Behavior of Reinforced Concrete Buildings by Static and Dynamic Analysis Methods (TR) Merve Şahin Yön, Mehmet Emin Öncü | Model updating of a reinforced concrete minaret by using ambient vibration tests (EN) Musa Yetkin, Hakan Erkek, Yusuf Calayır |
| 15:35-15:50 | A Novel Approach for Post-Earthquake Collapse Risk Assessment of Damaged RC Buildings Subjected to Aftershock Hazard (EN) Ziya Muderrisoglu, Ufuk Yazgan | Evaluation of TSDC-2018 on Design of Base Isolated Superstructures (TR) Necmettin Güneş, Zülfü Çınar Ulucan | Experimental Investigation of Reinforcement Ends in High Strength Concrete (TR) T. Tibet Akbaş, Kıvanç Taşkın, Özlem Çalışkan |
| 15:50-16:05 | Empirical Seismic Fragility Curves for Atmospheric Storage Tanks (TR) Sezer Öztürk, Fırat Bezir, Ali Sarı | 2018 and 2007 Earthquake Regulations for Assessment of Existing Buildings (TR) Çiğdem Çırak Karakaş, Ali Kalkan, Mehmet Palancı, Şevket Murat Şenel | The Effect of Wind, Environmental and Earthquake Forces on the Diagnosis of the Dynamic Characteristics of High-rise Buildings (TR) Kemal Beyen |
| 16:05-16:20 | On the Residual Displacement Demands of SDOF Systems using Code Compatible Record Sets (EN) Mehmet Palancı, Ahmet Demir, Ali Haydar Kayhan | A New Approach for Seismic Gap Distance Calculation in Earthquake Codes (TR) Muhammet Kamal, Mehmet Inel | Development of a New Dynamic Loading Protocol for Wood Shearwalls (EN) Cem Yenidogan, Ryota Nishi, Takuya Nagae, Takahito Inoue, Koichi Kajiwara |
| 16:20-16:35 | | Comparison of Section Damage Limits Defined in Turkish Seismic Design Codes (TR) Esra Özer, Mehmet Inel, Fatma Şeyma İzci | |
| 16:35-16:45 | Break | | |
| 16:45-17:15 | Session 9 – Hall A | | |
| 16:45-17:15 | Chair: Altuğ Erberik Theme Lecture: Dimitrios Vamvatsikos “A Dürüm Döner View of Seismic Risk Assessment” | | |
| 17:15-19:00 | Closing Session – Hall A | | |
| 17:15-18:55 | PANEL: Earthquake Damage Mitigation: What has been done? What could not be done? and What should be done? Moderators: Nusret Suna and Alper İlki Panelists (Listed by Surname): Gökhan Kazım Elgin (Director, Istanbul Project Coordination Unit) Mustafa Erdik (Chair, Turkish Earthquake Foundation) Vedad Gürgeç (General Director, Infrastructure and Urban Transformation Services) Tayfun Kahraman (Chairman, IMM Department of Earthquake Risk Management and Urban Improvement) Nuray Karancı (Professor, TOBB University, Psychology Department) Ekrem Kurt (Assoc. Professor, MEF University, Law) Serpil Öztürk (General Secretary, Turkish Catastrophe Insurance Pool TCIP) S. Gülsun Parlak (Vice Chair, Turkish Chamber of Civil Engineers) Azime Tezer (Professor, ITU, Architecture, Urban and Regional Planning) | | |
| 18:55-19:00 | Closing (Nusret Suna, Alper İlki) | | |