



# ACE 2020-21

## 14<sup>th</sup> INTERNATIONAL CONGRESS ON ADVANCES IN CIVIL ENGINEERING

6-8 September 2021

Yildiz Technical University ▪ ISTANBUL / TURKEY



PROGRAM

[www.ace2020.org](http://www.ace2020.org)



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6.Sep.21	Hall 1	Hall 2	Hall 3
09:00-09:15	<b>Opening Speech</b>		
09:15-10:00	<b>Keynote 1</b> <b>Rahmi Akçelik</b> <b>Session Chair: Sükrü Ersoy</b> <b>Co-chair: Onur Şahin</b>		
10:00-10:15	Break		
10:15-11:15	<b>Session 1</b> Building Materials <b>Session Chair:</b> <b>Özgür Çakır</b> <b>Co-chair:</b> <b>Abdullah H. Akça</b>	<b>Session 2</b> Structures <b>Session Chair:</b> <b>Yusuf Ayvaz</b> <b>Co-chair:</b> <b>Orkun Yılmaz</b>	<b>Session 3</b> Transportation <b>Session Chair:</b> <b>İsmail Şahin</b> <b>Co-chair:</b> <b>Onur Şahin</b>
11:15-11:30	Break		
11:30-12:30	<b>Session 4</b> Geotechnics <b>Session Chair:</b> <b>Mehmet Berilgen</b> <b>Co-chair:</b> <b>Murat Gülen</b>	<b>Session 5</b> Hydraulics <b>Session Chair:</b> <b>Esin Çevik</b> <b>Co-chair:</b> <b>Erdal Keskin</b>	<b>Session 6</b> Structures <b>Session Chair:</b> <b>Güray Arslan</b> <b>Co-chair:</b> <b>Zeynep Ünal Aslan</b>
12:30-13:30	Lunch		
13:30-14:15	<b>Keynote 2</b> <b>Didem Ozevin</b> <b>Session Chair:</b> <b>Ali Koçak</b> <b>Co-chair:</b> <b>Orkun Yılmaz</b>		
14:15-14:30	Break		
14:30-15:15	<b>Keynote 3</b> <b>Alper İLKI</b> <b>Session Chair:</b> <b>Murat S.Kırçıl</b> <b>Co-chair:</b> <b>Hasan Cem Akkaya</b>		
15:15-15:30	Break		
15:30-16:30	<b>Session 7</b> Hydraulics <b>Session Chair:</b> <b>Anıl A.Güner</b> <b>Co-chair:</b> <b>Erdal Keskin</b>	<b>Session 8</b> Structures <b>Session Chair:</b> <b>Murat S. Kırçıl</b> <b>Co-chair: Hasan Cem Akkaya</b>	<b>Session 9</b> Building Materials <b>Session Chair:</b> <b>Mücteba Uysal</b> <b>Co-chair:</b> <b>Burcu Dinç</b>
16:30-16:45	Break		
16:45-17:45	<b>Session 10</b> Structures <b>Session Chair:</b> <b>Barış Sevim</b> <b>Co-chair:</b> <b>Birkan Dağ</b>	<b>Session 11</b> Building Materials <b>Session Chair:</b> <b>Orhan Canpolat</b> <b>Co-chair:</b> <b>Muhammed Bayram</b>	<b>Session 12</b> Geotechnics <b>Session Chair:</b> <b>Saadet Berilgen</b> <b>Co-chair: Abdülmüttalip Ari</b>



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	7.Sep.21	Hall 1	Hall 2	Hall 3
09:00-09:45		<b>Keynote 4</b> <b>Mehmet E. Ozbek</b> <b>Session Chair: Zeynep Işık</b> <b>Co-chair: Ozan Okudan</b>		
09:45-10:00		Break		
10:00-11:00		Session 13 Geotechnics <b>Session Chair:</b> <b>Suat Akbulut</b> <b>Co-chair:</b> <b>Oğuzhan Saltalı</b>	Session 14 Structures <b>Session Chair:</b> <b>Serkan Bekiroğlu</b> <b>Co-chair:</b> <b>Hasan Cem Akkaya</b>	Session 15 Construction Management <b>Session Chair:</b> <b>Cenk Budayan</b> <b>Co-chair:</b> <b>Ozan Okudan</b>
11:00-11:15		Break		
11:15-12:15		Session 16 Building Materials <b>Session Chair:</b> <b>Orhan Canpolat</b> <b>Co-chair:</b> <b>Tarık Ömür</b>	Session 17 Mechanics <b>Session Chair:</b> <b>Gülçin Tekin Özkan</b> <b>Co-chair:</b> <b>Yurdakul Aygörmöz</b>	Session 18 Transportation <b>Session Chair:</b> <b>Mustafa Gürsoy</b> <b>Co-chair:</b> <b>Berna Aksoy</b>
12:15-13:15		Lunch		
13:15-14:00		<b>Keynote 5</b> <b>Marcel Stive</b> <b>Session Chair:</b> <b>Yalçın Yüksel</b> <b>Co-chair: F</b> <b>ulya İşlek</b>		
14:00-14:15		Break		
14:15-15:00		<b>Keynote 6</b> <b>Bülent Akbaş</b> <b>Session Chair:</b> <b>Güray Arslan</b> <b>Co-chair:</b> <b>Sefa Uzun</b>		
15:00-15:15		Break		
15:15-16:15		Session 19 Hydraulics <b>Session Chair:</b> <b>Mehmet Öztürk</b> <b>Co-chair:</b> <b>Mustafa K.Soytorun</b>	Session 20 Structures <b>Session Chair:</b> <b>Fatih Alemdar</b> <b>Co-chair:</b> <b>Sefa Uzun</b>	Session 21 Geotechnics <b>Session Chair:</b> <b>Pelin T. Özener</b> <b>Co-chair:</b> <b>Ayşenur A. Fidan</b>
16:15-16:30		Break		
16:30-17:30		Session 22 Structures <b>Session Chair:</b> <b>Serkan Bekiroğlu</b> <b>Co-chair:</b> <b>Zeynep Ünal Aslan</b>	Session 23 Structures <b>Session Chair:Zeynep</b> <b>Alemdar</b> <b>Co-chair: Metin Karslıoğlu</b>	Session 24 Geotechnics <b>Session Chair:</b> <b>Pelin T. Özener</b> <b>Co-chair:</b> <b>Oğuzhan Saltalı</b>
17:30-17:45		Break		
17:45-18:45		Session 25 Poster Session <b>Co-chair:</b> <b>Abdullah Maltaş</b>	Session 26 Building Materials <b>Session Chair:</b> <b>Didem Yaşar Oktay</b> <b>Co-chair:</b> <b>Betül Değer Şitilbay</b>	Session 27 Transportation <b>Session Chair:</b> <b>M. Sinan Yardım</b> <b>Co-chair:</b> <b>Mehmet Şirin Artan</b>



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09:00-09:45	<b>Keynote 7</b> <b>Orhun Köksal</b> <b>Session Chair:</b> <b>Muzaffer Börekçi</b> <b>Co-chair:</b> <b>Zeynep Ünal Aslan</b>		
09:45-10:00	Break		
10:00-11:00	Session 28 Mechanics <b>Session Chair:</b> <b>Zafer Kütüğü</b> <b>Co-chair:</b> <b>Hasan Numan Ölmez</b>	Session 29 Structures <b>Session Chair:</b> <b>Muzaffer Börekçi</b> <b>Co-chair:</b> <b>Alperen T. Demirbağ</b>	Session 30 Construction Management <b>Session Chair:</b> <b>Şenay Atabay</b> <b>Co-chair:</b> <b>Gökhan Demirdöğen</b>
11:00-11:15	Break		
11:15-12:15	Session 31 Geotechnics <b>Session Chair:</b> <b>Suat Akbulut</b> <b>Co-chair:</b> <b>Şeyma Kuşakçı</b>	Session 32 Construction Management <b>Session Chair:</b> <b>Asli Pelin Gürgün</b> <b>Co-chair:</b> <b>Kerim Koç</b>	Session 33 Structures <b>Session Chair:</b> <b>Barış Sevim</b> <b>Co-chair:</b> <b>Rafet Şişman</b>
12:15-13:15	Lunch		
13:15-14:15	Session 34 Hydraulics <b>Session Chair:</b> <b>Cihan Şahin</b> <b>Co-chair:</b> <b>Sait G. Yıldız</b>	Session 35 Structures <b>Session Chair:</b> <b>Serhat Erdoğan</b> <b>Co-chair:</b> <b>Ömer C. Cücemen</b>	Session 36 Geotechnics <b>Session Chair:</b> <b>Saadet Arzu Berilgen</b> <b>Co-chair:</b> <b>Abdülmuttalip Ari</b>
14:15-14:30	Break		
14:30-15:15	<b>Keynote 8</b> <b>Moncef L. Nehdi</b> <b>Session Chair:</b> <b>Nihat Kabay</b> <b>Co-chair:</b> <b>Burcu Dinç</b>		
15:15-15:30	Break		
15:30-16:15	<b>Keynote 9</b> <b>Erol Tutumluer</b> <b>Session Chair:</b> <b>M. Sinan Yardım</b> <b>Co-chair:</b> <b>Abdülşamet Saraçoğlu</b>		
16:15-16:30	Break		
16:30-17:30	Session 37 Structures <b>Session Chair:</b> <b>Çağrı Mollamahmutoğlu</b> <b>Co-chair:</b> <b>Doğan Sağlam</b>	Session 38 Building Materials <b>Session Chair:</b> <b>Serhan Ulukaya</b> <b>Co-chair:</b> <b>Abdülşamet Saraçoğlu</b>	Session 39 Hydraulics <b>Session Chair:</b> <b>Berna A. Aydoğan</b> <b>Co-chair:</b> <b>Sait Genar Yıldız</b>
17:30-17:45	Closing Speech		



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## Hall 1

09:00-09:15 **Opening Speech**

09:15-10:00

### Keynote 1

**“Will traffic model applications replace traffic modellers?”**

**Rahmi Akçelik**

**Akcelik and Associates Pty Ltd**

**(SIDRA SOLUTIONS)**

10:00-10:15 **Break**

### Session 1

#### Building Materials

1056 - A COMPARATIVE STUDY ON THE PERMEABILITY PROPERTIES OF CONCRETES INCORPORATING ARTIFICIAL AND NATURAL AGGREGATES

Olabode Adekunle Ayodele <sup>1</sup>, Süleyman İpek <sup>2</sup>, Kasım Mermerdaş <sup>3</sup>

The University of Auckland Civil and Environmental Engineering Auckland-New Zealand <sup>1</sup> Bingöl University Department of Architecture Bingöl-Turkey <sup>2</sup> Harran University Department of Civil Engineering Şanlıurfa-Turkey <sup>3</sup>

1104 - A REVIEW OF STRENGTH AND DURABILITY ASPECTS OF CONCRETES CONTAINING FLY ASH AS CEMENT REPLACEMENT CONSTITUENT

Hamza Saeed <sup>1</sup>, Elif Nazli Akbas <sup>1</sup>, Khaled Marar <sup>1</sup>

10:15-11:15 Eastern Mediterranean University Civil Engineering Famagusta-Northern Cyprus <sup>1</sup>

1107 - Fresh and Hardened State Properties of Lime-Based Grouts Produced from Waste Volcanic Tuff of Cappadocia Region

B. Dinç-Şengönül <sup>1</sup>, M. Bayram <sup>2</sup>, D. Oktay <sup>3</sup>, N. Yüzer <sup>4</sup>

<sup>1</sup> Department of Civil Engineering, YTU, Istanbul, Turkey

<sup>2</sup> Department of Civil Engineering, YTU, Istanbul, Turkey

<sup>3</sup> Department of Civil Engineering, YTU, Istanbul, Turkey

<sup>4</sup> Department of Civil Engineering, YTU, Istanbul, Turkey

1118 - COMPRESSIVE STRENGTH EVALUATION OF PUMICE BASED CONCRETES PRODUCED WITH MINERAL ADMIXTURES

Anıl Niş <sup>1</sup>, Taha S. W. Al Antaki <sup>1</sup>

Istanbul Gelisim University Civil Engineering İstanbul-Turkey <sup>1</sup>

11:15-11:30 **Break**



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Hall 1

## Session 4 Geotechnics

1020 - STABILIZATION OF AN EXPANSIVE SOIL APPLYING LIME COLUMN TECHNIQUE

İlyas Özkan <sup>1</sup>, Erdal Çokça <sup>2</sup>

Necmettin Erbakan Üniversitesi Civil Engineering Konya-Turkey <sup>1</sup> Orta Doğu Teknik Üniversitesi Civil Engineering Ankara-Turkey <sup>2</sup>

1035 - TWO-DIMENSIONAL SURFACE TOPOGRAPHY ALTERATIONS OF GEOMEMBRANE LINERS DUE TO MOBILIZED SHEAR AGAINST ROUNDED OR ANGULAR PARTICULATE MATERIALS

11:30-12:30

Tanay Karademir <sup>1</sup>

Istanbul Bilgi University Civil Engineering Istanbul-Turkey <sup>1</sup>

1042 - SOIL – GEOFOAM INTERFACE SHEAR BEHAVIOR: INFLUENCE OF COUNTERFACE SOIL TYPE AND LOADING CONDITIONS

Tanay Karademir <sup>1</sup>

Istanbul Bilgi University Civil Engineering Istanbul-Turkey <sup>1</sup>

1046 - EFFECT OF MICRO SILICA FUME ON THE ALLUVIAL CLAY BEHAVIOURAL PROPERTIES

Hamza Saeed <sup>1</sup>, Bashar Alibrahim <sup>1</sup>, Ali Hossien Basheer Garoushi <sup>1</sup>, Zalihe Nalbantoğlu <sup>1</sup>

Eastern Mediterranean University Civil Engineering Famagusta-Northern Cyprus <sup>1</sup>

12:30-13:30

**Lunch**

13:30-14:15

### Keynote 2

**“Bridging Structural Design and Structural Health Monitoring”**

**Didem Ozevin**

**University of Illinois at Chicago (UIC)**

**Department of Civil, Materials and Environmental Engineering**

14:15-14:30

**Break**

14:30-15:15

### Keynote 3

**“Seismic Risk Assessment of Building Stock in Istanbul”**

**Alper İLKI**

**Istanbul Technical University**

**Department of Civil Engineering**

15:15-15:30

**Break**



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Hall 1

## Session 7 Hydraulics

1017 - MORPHOLOGIC PARAMETERS INTER-CORRELATION OF A BASIN

Hüseyin Haksayar <sup>1</sup>, Mustafa Ergil <sup>1</sup>

European University of Lefke Civil Engineering Lefke-Cyprus <sup>1</sup>

1083 - METEOROLOGICAL DROUGHT OVER KUCUK MENDERES RIVER BASIN

Yonca Çavuş <sup>1</sup>, Halil Ibrahim BURGAN <sup>2</sup>, Hafzullah AKSOY <sup>3</sup>, Hakan AKSU <sup>4</sup>, Bulent SELEK <sup>5</sup>, Ebru ERIS DUMAN <sup>6</sup>, Hulya BOYACIOGLU <sup>7</sup>

Beykent University/Istanbul Technical University Department of Civil Engineering Istanbul-Turkey <sup>1</sup> Istanbul Kultur University Department of Civil Engineering Istanbul-Turkey <sup>2</sup> Istanbul Technical University Department of Civil Engineering Istanbul-Turkey <sup>3</sup> Samsun University Department of Meteorological Engineering Samsun-Turkey <sup>4</sup> Ministry of Agriculture and Forestry Ankara-Turkey <sup>5</sup> Ege University Department of Civil Engineering Izmir-Turkey <sup>6</sup> Dokuz Eylul University Department of Environmental Engineering Izmir-Turkey <sup>7</sup>

15:30-16:30

1180- Simultaneous Determination of the Horizontal and the Vertical Hydraulic Conductivity in a Small and Non-Homogenous Soil Sample

B. Vaheddoost <sup>1</sup>, S. Rahimzadeh Arashloo <sup>2</sup>, M. J. S. Safari <sup>3</sup>,

Department of Civil Engineering, Bursa Technical University, Bursa, Turkey <sup>1</sup>

Department of Computer Engineering, Bilkent University, Ankara, Turkey <sup>2</sup>

Department of Civil Engineering, Yasar University, Izmir, Turkey <sup>3</sup>

1226 - EXPERIMENTAL STUDY ON SCOUR CHARACTERISTICS AT UPSTREAM OF A CIRCULAR INTAKE

Berkay Erat <sup>1</sup>, Efe Barbaros <sup>1</sup>, Muhammed Miraç Karataş <sup>1</sup>, Kerem Taştan <sup>1</sup>

Gazi University Civil Engineering Ankara-Turkey <sup>1</sup>

16:30-16:45

**Break**



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Hall 1

## Session 10 Structures

1023 - PUSHOVER ANALYSIS OF REINFORCED CONCRETE STRUCTURES WITH MASSIVE INFILL WALL BY MEANS OF A MACRO MODELLING APPROACH

Onur Onat <sup>1</sup>, Bartolomeo Panto <sup>2</sup>

Inonu University Civil Engineering Malatya-Turkey <sup>1</sup> Imperial College London Civil and Environmental Engineering London-United Kingdom <sup>2</sup>

16:45-17:45

1049 - COMPARISON OF NEAR-FIELD GROUND MOTION RECORDS AND SYNTHETIC PULSE MODELS IN TERMS OF ACCELERATION RESPONSE OF RACKS IN SEISMICALLY ISOLATED BUILDINGS

Zafer Kanbir <sup>1</sup>, Onur Çevik <sup>1</sup>, Z. Metehan Karslıoğlu <sup>1</sup>, Cenk Alhan <sup>1</sup>  
Istanbul University-Cerrahpaşa Civil Engineering Istanbul-Turkey <sup>1</sup>

1058 - SENSITIVITY OF SEISMIC DEMAND PARAMETERS TO EARTHQUAKE EPICENTER LOCATION

Shaghayegh Karimzadeh <sup>1</sup>, Çağlar Temiz <sup>1</sup>  
METU Civil Engineering Department Ankara-Turkey <sup>1</sup>

1059 - STATE OF THE ART MODELING OF SOIL-STRUCTURE INTERACTION PROBLEMS USING OPENSEES

Vefa Okumus <sup>1</sup>, Cenk Alhan <sup>1</sup>  
Istanbul University - Cerrahpaşa Civil Engineering Istanbul-Turkey <sup>1</sup>

1221 - EVALUATION THE EFFICIENCY OF FRAME ELEMENT FOR WAVE PROPAGATION ANALYSIS

Fikret Mehdi <sup>1</sup>, Yasin Fahjan <sup>2</sup>, Adem Doğangün <sup>1</sup>  
Bursa Uludağ University Civil Engineering Bursa-Turkey <sup>1</sup> Istanbul Technical University Civil Engineering Istanbul-Turkey <sup>2</sup>





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Hall 2

## Session 2 Structures

1062 - FDS ANALYSIS OF A HIGH RISE RESIDENTIAL BUILDING IN ISTANBUL

Uğur Dündar<sup>1</sup>, Serdar Selamet<sup>1</sup>

Boğaziçi University Civil Engineering İstanbul-Turkey<sup>1</sup>

1089 - EVALUATION OF ISOLATOR ELEMENT MODELS AVAILABLE IN  
OPENSEES IN TERMS OF STRUCTURAL RESPONSES OF BASE-ISOLATED  
BUILDINGS

Zafer Kanbir<sup>1</sup>, Cenk Alhan<sup>1</sup>, Gökhan Özdemir<sup>2</sup>

10:15-11:15

Istanbul University-Cerrahpaşa Civil Engineering İstanbul-Turkey<sup>1</sup> Eskişehir  
Technical University Civil Engineering Eskişehir-Turkey<sup>2</sup>

1091 - THREE DIMENSIONAL FINITE ELEMENT ANALYSIS OF FAILURE IN  
MASONRY USING COHESIVE SURFACES AND CONTACTS

Üveys Gözün<sup>1</sup>, İzzet Özdemir<sup>1</sup>, Cemalettin Dönmez<sup>1</sup>

Izmir Institute of Technology Civil Engineering İzmir-Turkey<sup>1</sup>

1164 - INFLUENCE OF GROUND MOTION DURATION ON RESPONSE OF A  
LEAD RUBBER BEARING ISOLATED STRUCTURE

Ecem Şölenoğlu<sup>1</sup>, Tuncer Çiftçi<sup>1</sup>, Esengül Çavdar<sup>1</sup>, Gökhan Özdemir<sup>1</sup>

Department of Civil Engineering, ESTU Eskişehir-Turkey<sup>1</sup>

11:15-11:30

**Break**



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Hall 2

## Session 5 Hydraulics

- 1227 - NUMERICAL SIMULATION OF SCOUR AT UPSTREAM OF AN INTAKE  
Berkay Erat<sup>1</sup>, Efe Barbaros<sup>1</sup>, Muhammed Miraç Karataş<sup>1</sup>, Kerem Taştan<sup>1</sup>  
Gazi University Civil Engineering Ankara-Turkey<sup>1</sup>
- 1283 - EXPERIMENTAL INVESTIGATION OF A FAILURE OF A  
HOMOGENEOUS EARTHEN DAM BY OVERTOPPING  
Ebru Taşkaya<sup>1</sup>, Gökçen Bombar<sup>1</sup>, Gökmen Tayfur<sup>2</sup>  
Izmir Katip Celebi University Civil Engineering Izmir-Turkey<sup>1</sup> Izmir Institute of  
Technology Civil Engineering Izmir-Turkey<sup>2</sup>
- 11:30-12:45 1313 - PREDICTING ROUTED STREAMFLOW USING MACHINE LEARNING  
Mustafa Sahin Dogan<sup>1</sup>  
Aksaray University Department of Civil Engineering Aksaray-Turkey<sup>1</sup>
- 1406 - NUMERICAL INVESTIGATION OF WATER HAMMER PROBLEMS AND  
POTENTIAL SOLUTIONS IN PUMP DISCHARGE LINES  
Recep Çağrı Erdem<sup>1</sup>, Zafer Bozkuş<sup>2</sup>  
TÜPRAŞ Civil Engineer Ankara-Turkey<sup>1</sup> ODTÜ Civil Engineering Ankara-Turkey<sup>2</sup>
- 1407 - FLOOD PROTECTION WORKS OF CIRNIK BRIDGE IN MURATPASA  
DISTRICT, ANTALYA  
Uğur Can Karakuş<sup>1</sup>, Zafer Bozkuş<sup>1</sup>  
ODTÜ Civil Engineering Ankara-Turkey<sup>1</sup>

12:45-13:30 **Lunch**

## Session 8 Structures

- 1173 - YIELD SHEAR FORCE COEFFICIENT FOR RC FRAMES BASED ON  
ENERGY BALANCE CONCEPT  
Taner Ucar<sup>1</sup>, Onur Merter<sup>2</sup>  
Dokuz Eylul University Architecture Izmir-Turkey<sup>1</sup> Izmir University of  
Economics Civil Engineering Izmir-Turkey<sup>2</sup>
- 1175 - SUGGESTING BOX PLATES FOR I-COLUMN AROUND WEAK AXIS IN  
THE BOLTED END-PLATE CONNECTION  
Orkun Yılmaz<sup>1</sup>, Serkan Bekiroğlu<sup>1</sup>  
15:30-16:30 Yıldız Technical University Civil Engineering Istanbul-Turkey<sup>1</sup>
- 1183 - FREQUENCY DOMAIN MODAL IDENTIFICATION USING  
EXPECTATION MAXIMIZATION ALGORITHM  
Çağlayan Hızal<sup>1</sup>  
Izmir Institute of Technology Civil Engineering Izmir-Turkey<sup>1</sup>
- 1195 - COHERENCE INVESTIGATION FOR MULTIPLE SETUP MEASUREMENTS  
WITH ROVING REFERENCE SENSORS  
HASAN CEYLAN<sup>1</sup>, ÇAĞLAYAN HIZAL<sup>1</sup>, GÜRSOY TURAN<sup>1</sup>  
Izmir Institute of Technology Civil Engineering Izmir-Turkey<sup>1</sup>

16:30-16:45 **Break**



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Hall 2

## Session 11 Building Materials

1034 - COMPRESSIVE STRENGTH OF SULFUR POLYMER CONCRETES IN COMPARISON WITH PORTLAND CEMENT CONCRETES

Onur Öztürk<sup>1</sup>, Adnan Öner<sup>1</sup>

Kocaeli University Civil Eng. Kocaeli-Turkey<sup>1</sup>

1241 - MECHANICAL PROPERTIES OF SLURRY INFILTRATED FIBER CONCRETES CONTAINING WASTE STEEL FIBERS

Pınar Çelikcan<sup>1</sup>, Özkan Şengül<sup>2</sup>

Maltepe University Civil Engineering Department Istanbul-Turkey<sup>1</sup> Istanbul Technical University Civil Engineering Istanbul-Turkey<sup>2</sup>

1242 - THE EFFECTS OF THE MODIFIED ANDREASSEN PARTICLE MODEL FOR INCREASE OF PACKING DENSITY IN HEAVY MORTAR

Alper Orhun Erüz<sup>1</sup>, Mustafa Hulusi Özkul<sup>2</sup>, Özlem Akalın<sup>3</sup>, Muhammed Maraşlı<sup>4</sup>

Istanbul Technical University Civil Engineering Istanbul-Turkey<sup>1</sup> Beykent University Civil Engineering Istanbul-Turkey<sup>2</sup> PLUSTECHNO research and development Istanbul-Turkey<sup>3</sup> Fibrobeton research and development Istanbul-Turkey<sup>4</sup>

16:45-18:30

1246 - INTRODUCTION OF DREDGED SLUDGE IN ORDINARY CONCRETE MATRIX.

Mohamed Aziz Chikouche<sup>1</sup>, Laid Baali<sup>1</sup>, Deghfel Moussa<sup>1</sup>

Laboratory of Materials and Mechanics of Structures, Mohamed Boudiaf university Civil engineering M'sila-Algeria<sup>1</sup>

1286 - EFFECTS OF WASHWATER SLUDGE OBTAINED FROM READY-MIXED CONCRETE PLANTS ON HYDRATION AND MECHANICAL PROPERTIES OF MORTAR

Adil Görkem Gedik<sup>1</sup>, Ünal Anıl Doğan<sup>1</sup>

Istanbul Technical University Civil Engineering İstanbul Anadolu-Turkey<sup>1</sup>

1410 - THE EFFECT OF ALKALINE SOLUTIONS ON THE PROPERTIES OF SLAG GEOPOLYMER MORTAR

Nihat Kabay<sup>1</sup>, Tarık Ömür<sup>1</sup>, Nausad Miyan<sup>1</sup>, Hakan Ozkan<sup>1</sup>

Yıldız Technical University Civil engineering Istanbul-Turkey<sup>1</sup>

1454 - EVALUATION OF 3D PRINTABILITY OF CONCRETE INCORPORATING RECYCLED AGGREGATE POWDER AND PCM

A. H. Akca<sup>1</sup>, B. Dinç-Şengönül<sup>1</sup>, T. Ömür<sup>1</sup>, C. B. Üstündağ<sup>2</sup>, N. Kabay<sup>1</sup>, Ö. Çakır<sup>1</sup>, N. Yüzer<sup>1</sup>

Department of Civil Engineering, YTU, İstanbul, 34220 Turkey<sup>1</sup> Department of Bioengineering, YTU, İstanbul, 34220 Turkey<sup>2</sup>



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Hall 3

## Session 3 Transportation

1188 - MODELING THE EFFECTS OF TRAFFIC INCIDENT DURATION ON TRAFFIC FLOW

Ali Sercan Kesten <sup>1</sup>, Ali Rıza Alan <sup>1</sup>  
IŞIK University Civil Engineering Istanbul-Turkey <sup>1</sup>

1322 - EFFECT OF TALL OIL-BASED BORON OXIDE COMPOUND ON MICROSTRUCTURE OF ASPHALT BINDER

Hacer Yesilcicek <sup>1</sup>, Merve Gulfer Bozdemir <sup>2</sup>, Seref Oruc <sup>3</sup>  
Karadeniz Technical University Of Technology Faculty Civil Engineering Trabzon-Turkey <sup>1</sup> Erzurum Technical University Engineering and Architecture Faculty Civil Engineering, Faculty of Engineering and Architecture Erzurum-Turkey <sup>2</sup> Karadeniz Technical University Engineering Faculty Civil Engineering Trabzon-Turkey <sup>3</sup>

10.15-11.30

1323 - SYNTHESIS OF A NEW BORON ADDED RESIN COMPOUND AND INVESTIGATION OF ITS MICROSTRUCTURE

Merve Gulfer Bozdemir <sup>1</sup>, Hacer Yesilcicek <sup>2</sup>, Seref Oruc <sup>3</sup>  
Erzurum Technical University Engineering and Architecture Faculty Civil Engineering Erzurum-Turkey <sup>1</sup> Karadeniz Technical University Of Technology Faculty Civil Engineering Trabzon-Turkey <sup>2</sup> Karadeniz Technical University Engineering Faculty Civil Engineering Trabzon-Turkey <sup>3</sup>

1311 - EFFECTS OF COVID-19 PANDEMIC ON PEDESTRIAN TRIPS

Gürkan Günay <sup>1</sup>, Selim Dündar <sup>2</sup>  
Doğuş University Civil Engineering Istanbul-Turkey <sup>1</sup> Istanbul Okan University Civil Engineering Istanbul-Turkey <sup>2</sup>

1450 - UTILIZING OF WASTE STYROFOAM AS MODIFIER IN BITUMEN: LEARNINGS FROM PRELIMINARY RESULTS

İ. Gökalp <sup>1</sup>  
Adana Alparslan Türkeş Bilim ve Teknoloji Üniversitesi İnşaat Mühendisliği Bölümü Adana-Turkey <sup>1</sup>



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## Session 6 Structures

1223 - CREATING A TYPE OF CONTROLLED SOFT STORY BY USING HARDENING SPRINGS FOR UPGRADING THE SEISMIC BEHAVIOR OF MULTISTORY BUILDINGS

Mahmood Hosseini<sup>1</sup>, Mehmet Cemal Genç<sup>1</sup>, Mohammad Azımı Vazırı<sup>2</sup>  
Eastern Mediterranean University Department of Civil Engineering, Famagusta,  
North Cyprus Civil Engineering Famagusta-Northern Cyprus<sup>1</sup> Dept. of Civil  
Engineering, Cyprus International University, Nicosia, Northern Cyprus Civil  
Engineering Famagusta-Northern Cyprus<sup>2</sup>

11:30-12:30

1231 - NONLINEAR FINITE ELEMENT MODELING OF REINFORCED CONCRETE COLUMNS

Yagiz Ercin<sup>1</sup>, Fethi Gullu<sup>2</sup>, Kutay Orakcal<sup>3</sup>  
McMaster University Faculty of Engineering Hamilton-Canada 1 Harran  
University Department of Civil Engineering Sanliurfa-Turkey 2 Bogazici  
University Department of Civil Engineering Istanbul-Turkey<sup>3</sup>

1263 - MARMARA REGION AND WESTERN ANATOLIA SETTLEMENT INFORMATION AND ANALYSIS OF EARTHQUAKE PARAMETERS FOR DISASTER AND EMERGENCY SITUATIONS

Fahri Birinci<sup>1</sup>, Emre Alpaslan<sup>1</sup>  
Ondokuz Mayıs University Civil Engineering Samsun-Turkey<sup>1</sup>

1269 - FLOOD LOSS AND FUNCTIONALITY MODELS FOR SINGLE-FAMILY HOMES

Ahmet Bugra Ceyhan<sup>1</sup>, Derya Deniz<sup>1</sup>  
Ozyegin University Civil Engineering Istanbul-Turkey<sup>1</sup>

12:30-13:30

**Lunch**



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Hall 3

## Session 9 Building Materials

1295 - DURABILITY AND MECHANICAL PROPERTIES OF MORTAR MIXTURES REFINED WITH MICRO AND NANO-SILICA

Merve Başaran <sup>1</sup>, Şervan Baran <sup>1</sup>, Sidar Nihat Bıçakçı <sup>1</sup>, Hakan Nuri Atahan <sup>1</sup>  
ITU Civil Engineering Istanbul-Turkey <sup>1</sup>

1297 - EFFECT OF NANO-SILICA ON THE RHEOLOGY AND INITIAL-FINAL SETTING TIMES OF FLY ASH CONCRETE MIXTURES

Ahmet Baran <sup>1</sup>, Hasan Nuri Türmenöğlü <sup>1</sup>, Sidar Nihat Bıçakçı <sup>1</sup>, Şervan Baran <sup>1</sup>,  
Hakan Nuri Atahan <sup>1</sup>  
ITU Civil Engineering İstanbul-Turkey <sup>1</sup>

15:30-16:30

1298 - EVALUATION OF PRE-PEAK STRESS-STRAIN CHARACTERISTICS OF HIGH-STRENGTH CONCRETE: SYNERGISTIC EFFECT OF MICRO AND NANO SILICA

Büşra Boyacı <sup>1</sup>, Hasan Nuri Türkmenoğlu <sup>1</sup>, Sidar Nihat Bıçakçı <sup>1</sup>, Şervan Baran <sup>1</sup>,  
Hakan Nuri Atahan <sup>1</sup>  
ITU Civil Engineering Istanbul-Turkey <sup>1</sup>

1299 - SYNERGISTIC EFFECTS OF MICRO & NANO-SILICA ON THE BOND PROPERTIES BETWEEN REINFORCING STEEL AND CONCRETE: EVALUATION OF BOND STRENGTH AND SLIP ENERGY

Büşra Boyacı <sup>1</sup>, Hasan Nuri Türkmenoğlu <sup>1</sup>, Sidar Nihat Bıçakçı <sup>1</sup>, Şervan Baran <sup>1</sup>,  
Hakan Nuri Atahan <sup>1</sup>  
ITU Civil Engineering Istanbul-Turkey <sup>1</sup>

16:30-16:45

**Break**



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Hall 3

## Session 12 Geotechnics

1224 - EFFECTS OF SPECIFIC GRAVITY, FINE CONTENT AND CONSISTENCY LIMITS OF KAOLIN-SAND MIXTURES ON THE COMPACTION BEHAVIOR

Hazal Berrak Gençdal <sup>1</sup>, Begüm Başbuğ <sup>1</sup>, Edip Seçkin <sup>1</sup>, Melda Yücel <sup>2</sup>, Zülal Akbay Arama <sup>3</sup>

Istanbul Kültür University Civil Engineering Istanbul-Turkey <sup>1</sup> Istanbul University-Cerrahpaşa Institute of Graduate Studies Istanbul-Turkey <sup>2</sup> Istanbul University-Cerrahpaşa Civil Engineering Istanbul-Turkey <sup>3</sup>

1236 - SITE RESPONSE ANALYSIS OF BURDUR CITY CENTER (SW TURKEY)

Mehmet Alpyürür <sup>1</sup>, Musaffa Aşen Lav <sup>2</sup>

16:45-17:45

Burdur Mehmet Akif Ersoy University Civil Engineering Burdur-Turkey <sup>1</sup> Istanbul Technical University Civil Engineering İstanbul-Turkey <sup>2</sup>

1252 - IMPROVEMENT OF EXPANSIVE SOILS BY USING SODIUM LIGNOSULFONATE

İlyas Özkan <sup>1</sup>, Erdal Çokça <sup>2</sup>

Necmettin Erbakan Üniversitesi Civil Engineering YENİMAHALLE -ANKARA-Turkey <sup>1</sup> METU Civil Engineering Çankaya-Turkey <sup>2</sup>

1266 - NON-DESTRUCTIVE DAMAGE DETECTION IN REINFORCED CONCRETE PILES AFTER A MAJOR EARTHQUAKE

Sami Arsoy <sup>1</sup>

Kocaeli University Civil Engineering Kocaeli-Turkey <sup>1</sup>



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## Hall 1

09:00-09:45

**Keynote 4**  
**“Civil Engineers Creating The Future”**  
**Mehmet E. Ozbek**  
**Colorado State University (CSU)**  
**Department of Construction Management**

09:45-10:00

**Break**

## Session 13 Geotechnics

10:00-11:00

1366 - INVESTIGATION OF SLOPE STABILITY OF WASTE BODY OF MUNICIPAL SOLID WASTE LANDFILLS BY NUMERICAL ANALYSIS  
Yağmur Bora <sup>1</sup>, Mehmet Şükrü Özçoban <sup>1</sup>, Murat Ergenekon Selçuk <sup>1</sup>  
Institute of Science Geotechnics Istanbul-Turkey <sup>1</sup>

1395 - EVALUATION OF DEFORMATION RESPONSE FOR ADJACENT TWIN TUNNELS

Özgün Sulu <sup>1</sup>, Saadet Arzu Berilgen <sup>1</sup>, Murat Ergenekon Selçuk <sup>1</sup>  
Yıldız Technical University Civil Engineering İstanbul-Turkey <sup>1</sup>

1402 - DETERMINATION OF FRICTION BETWEEN GEOGRID AND SOIL BY MEANS OF LARGE SCALE DIRECT SHEAR TESTS

Hayriye Sari <sup>1</sup>, Saadet A. Berilgen <sup>1</sup>, Murat Ergenekon Selçuk <sup>1</sup>  
Yıldız Technical University Civil Engineering İstanbul-Turkey <sup>1</sup>

1061 - NUMERICAL ANALYSIS VIA INSTRUMENTAL OBSERVATION OF EXCAVATION SUPPORT SYSTEMS: EXAMPLE OF GAYRETTEPE-THIRD AIRPORT METRO LINE HASDAL STATION

Enes Çobanoğlu <sup>1</sup>, Dara Hajebi <sup>1</sup>, Zülal Akbay Arama <sup>2</sup>  
Geodata Engineering Civil Eng. İstanbul(Avr)-Turkey <sup>1</sup> İstanbul University-Cerrahpaşa Civil Eng. İstanbul(Avr)-Turkey <sup>2</sup>

11:00-11:15

**Break**





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Hall 1

## Session 16 Building Materials

1301 - EVALUATION OF STRENGTH DEVELOPMENT OF FLY ASH CONCRETE WITH NANO-SILICA: A FOCUS ON PRE-PEAK STRESS-STRAIN BEHAVIOR

Ahmet Baran <sup>1</sup>, Hasan Nuri Türmenoğlu <sup>1</sup>, Sidar Nihat Bıçakçı <sup>1</sup>, Şervan Baran <sup>1</sup>, Hakan Nuri Atahan <sup>1</sup>

ITU Civil Engineering İstanbul-Turkey <sup>1</sup>

1317 - DECREASING ENVIRONMENTAL IMPACT OF CONCRETE BY USING HIGH-VOLUME FLY ASH CONCRETES

Elifsu Balci <sup>1</sup>, Onur Ozturk <sup>1</sup>, Nilufer Ozyurt <sup>1</sup>, Turan Ozturan <sup>1</sup>

Bogazici University Civil Engineering İstanbul-Turkey <sup>1</sup>

1339 - STATISTICAL ANALYSIS OF REBOUND NUMBERS DERIVED FROM VARIOUS CONSTRUCTIONS PLACED IN AVCILAR-MUSTAFA KEMAL PASA DISTRICT-ISTANBUL USING EASYFIT PROGRAMME

11:15-12:45 Kadir Kılınc <sup>1</sup>, Mustafa Mert Bayram <sup>2</sup>, Emre Kaya <sup>1</sup>, Ömer Kaan Yağcı <sup>1</sup>  
Kirkklareli University Civil Engineering Department Kirkklareli-Turkey <sup>1</sup> Kirkklareli University Institute of Natural Sciences, Department of Civil Engineering Kirkklareli-Turkey <sup>2</sup>

1358 - INFLUENCE OF PET FIBRES ON THE PLASTIC SHRINKAGE RESISTANCE OF CONCRETE

Necat Özaşık <sup>1</sup>

Eastern Mediterranean University Civil Engineering Gazimağusa-Cyprus <sup>1</sup>

1435 - DEVELOPMENT AND TESTING OF FIBER REINFORCED LIME-BASED GROUTS

Vasiliki Pachta <sup>1</sup>

Aristotle University of Thessaloniki Lab. of Building Materials Thessaloniki-Greece <sup>1</sup>

1444 - INVESTIGATION OF STRUCTURAL LIGHTWEIGHT CONCRETE IN TERMS OF ENERGY EFFICIENCY IN RESIDENTIAL BUILDINGS

S. Nayır <sup>1</sup>, Ü. Bahadır <sup>1</sup>, Ş. Erdoğan <sup>1</sup>, V. Toğan <sup>1</sup>

KTU Department of Civil Engineering Trabzon-Turkey <sup>1</sup>

12:45-13:15 **Lunch**

### Keynote 5

“The Sand Motor: a dynamic Building with Nature Solution”

Marcel Stive

TU Delft

Department Hydraulic Engineering

13:15-14:00

14:00-14:15 **Break**

### Keynote 6

“Capacity Design Principles for Braced Frames”

Bülent Akbaş

Gebze Technical University

Department of Civil Engineering

14:15-15:00

15:00-15:15 **Break**



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Hall 1

## Session 19 Hydraulics

1225 - ASSESSMENT OF FUTURE STABILITY OF BREAKWATERS WITH CUBE ARMOUR LAYERS UNDER CLIMATE CHANGE

Beril Türkekul <sup>1</sup>, Yalcin Yuksel <sup>1</sup>, Esin Cevik <sup>1</sup>  
Yıldız Technical University Civil Engineering Izmir-Turkey <sup>1</sup>

1414 - NUMERICAL SOLUTION TO KINEMATIC WAVE EQUATION FOR RAINFALL-RUNOFF ANALYSIS INVOLVING BARRIERS AND CAVITIES

15:15-16:15 Hasan Hüseyin Yıldırım <sup>1</sup>, İsmail Aydın <sup>1</sup>  
Middle East Technical University Civil Engineering Ankara-Turkey <sup>1</sup>

1418 - DAM BREAK ANALYSIS USING HEC-RAS: A CASE STUDY OF BIRECİK DAM, ŞANLIURFA

Mehmet Şeker <sup>1</sup>, Veysel Gümüş <sup>2</sup>, Oğuz Şimşek <sup>2</sup>  
Harran University Civil Engineering ŞANLIURFA-Turkey <sup>1</sup> Harran University Civil Engineering Dep ŞANLIURFA-Turkey <sup>2</sup>

1243 - DROUGHT DURATION AND SEVERITY ANALYSIS USING BIVARIATE COPULA THEORY (CASE STUDY: ŞANLIURFA PROVINCE, TURKEY)

Yavuz Avşaroğlu <sup>1</sup>, Veysel Gümüş <sup>1</sup>  
Harran University Civil Eng. Dep. Şanlıurfa-Turkey <sup>1</sup>

## Session 22 Structures

1284 - THE EFFECT OF THE BLOCKAGE RATIO UNDER THE CANOPY ROOFS ON THE WIND PRESSURE: A COMPARISON OF TS 498 AND TS EN 1991-1-4

İbrahim Özadıkı <sup>1</sup>, Zekeriya Aydın <sup>1</sup>  
T. Namık Kemal University Civil Engineering Tekirdağ-Turkey <sup>1</sup>

1328 - BOND PERFORMANCE OF HYBRID STEEL FIBER REINFORCED SELF-COMPACTING CONCRETE BEAMS

16:30-17:30 Ceren Kına <sup>1</sup>, Kazım Turk <sup>2</sup>  
Malatya Turgut Özal University Civil Engineering Malatya-Turkey <sup>1</sup> Inonu University Civil Engineering Malatya-Turkey <sup>2</sup>

1347 - PROGRESSIVE COLLAPSE ANALYSIS OF STEEL STRUCTURES ON ELASTIC FOUNDATION: PART-1. LINEAR STATIC PROCEDURES

Saffet Kılıçer <sup>1</sup>, Korhan Ozgan <sup>1</sup>, Ayse T. Daloglu <sup>1</sup>, S. Banu İkizler <sup>1</sup>  
Engineering Department of civil engineering Artvin-Turkey <sup>1</sup>

1367 - KUBBELERİN DÜŞEY YÜK ETKİSİ ALTINDAKİ DAVRANIŞI

Tülin Çelik <sup>1</sup>, Şükran Tanrıverdi <sup>1</sup>  
Aksaray Üniversitesi Civil Engineering AKSARAY-Turkey <sup>1</sup>

17:30-17:45 **Break**



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Hall 1

**Session 25**  
**Poster Session**

1007 - USING MACHINE LEARNING ALGORITHMS TO PREDICT FRICTION FACTOR OF SLURRY TRANSPORT IN CLOSED CONDUITS

Pelin İlker <sup>1</sup>, Alkım Gökçen <sup>2</sup>, Mehmet Sorgun <sup>1</sup>, Savaş Şahin <sup>2</sup>

Izmir Katip Celebi University Civil Engineering Izmir-Turkey <sup>1</sup> Izmir Katip Celebi University Department of Electrical and Electronics Engineering Izmir-Turkey <sup>2</sup>

1085 - ASSESSMENT OF THE WALKABILITY OF URBAN ARTERIALS: CASE OF ISTANBUL BAGDAT AVENUE

Selim Dünder <sup>1</sup>, Mustafa Sinan Yardım <sup>2</sup>, Eda Melis Zengin <sup>1</sup>, Egecan Emre Hüner <sup>1</sup>, Didem Çetin <sup>1</sup>, İrem Bolat <sup>1</sup>, Ecem Şentürk Berktaş <sup>1</sup>

Istanbul Okan University Civil Engineering Istanbul-Turkey <sup>1</sup> Yıldız Technical University Civil Engineering Istanbul-Turkey <sup>2</sup>

17:45-18:45

1093 - COMPARING THE PERFORMANCE OF DEEP LEARNING ALGORITHM WITH MACHINE LEARNING ALGORITHM FOR VEHICLE DETECTION IN HIGHWAY

Morteza Ahmadpur <sup>1</sup>, Iğın Gökaşar <sup>1</sup>

Bogazici University Civil Engineering Istanbul-Turkey <sup>1</sup>

1128 - PERFORMANCE EVALUATION OF A TBEC 2019 DESIGNED REINFORCED CONCRETE BUILDINGS WITH DIFFERENT FIRST STORY HEIGHTS

Mehmet Artun Baki <sup>1</sup>, Vesile Hatun Akansel <sup>1</sup>

Muğla Sıtkı Koçman University Civil Engineering Muğla-Turkey <sup>1</sup>

1176 - REVIEW OF PULL-OUT BEHAVIOUR OF HELICAL PILES EMBEDDED IN SAND

Tayfun Gul <sup>1</sup>, Sami Arsoy <sup>1</sup>

Kocaeli University Civil Engineering Kocaeli-Turkey <sup>1</sup>



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## Session 25 Poster Session

1228 - UTILIZATION OF WASTE MATERIALS IN MORTAR PRODUCTION

Ayşe Pekrioglu Balkıs<sup>1</sup>, Joel Idehen<sup>1</sup>

Cyprus International University Civil Engineering İefkosa-Cyprus<sup>1</sup>

1249 - DEVELOPING A BUILDING DEMOLITION MODEL WITH FINITE ELEMENT ANALYSIS

Ali Gürbüz<sup>1</sup>, Volkan Tavşan<sup>2</sup>

Recep Tayyip Erdoğan University civil engineering Rize-Turkey<sup>1</sup> Recep Tayyip

Erdoğan University civil engineering Rize-Turkey<sup>2</sup>

1251 - PRELIMINARY STUDY ON SITE SELECTION FOR FLOATING HYBRID WIND AND SOLAR ENERGY SYSTEMS IN TURKEY

Nevzat Can Yerlikaya<sup>1</sup>, Çağatay Çakan<sup>1</sup>, İlgin Başara<sup>1</sup>, Eray Caceoğlu<sup>1</sup>, Nejan Huvaj<sup>1</sup>

17:45-18:45

Middle East Technical University Civil Engineering Ankara-Turkey<sup>1</sup>

1256 - ANALYSIS OF THE BEHAVIOR OF SLOPES IMPROVED WITH STONE COLUMNS DURING EARTHQUAKES

Cenk Cuma Çadır<sup>1</sup>, Ferhat Şahinkaya<sup>1</sup>

Bozok University Civil Engineering YOZGAT-Turkey<sup>1</sup>

1257 - SEISMIC BEARING CAPACITY ANALYSIS OF SOIL IMPROVEMENT WITH STONE COLUMNS

Ferhat Şahinkaya<sup>1</sup>, Gökhan Demir<sup>2</sup>

Bozok University Civil Engineering YOZGAT-Turkey<sup>1</sup> Ondokuz Mayıs University

Civil Engineering SAMSUN-Turkey<sup>2</sup>

1314 - A STUDY ON THE IMPACT OF E SCOOTERS ON URBAN TRAFFIC

Selim Dünder<sup>1</sup>, Ecem Şentürk Berketaş<sup>1</sup>, Serhan Tanyel<sup>2</sup>

Istanbul Okan University Civil Engineering İstanbul-Turkey<sup>1</sup> Dokuz Eylül

University Civil Engineering İzmir-Turkey<sup>2</sup>



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Hall 2

## Session 14 Structures

1362 - SHAKE TABLE TESTS OF A SPECIAL SUSPENDED CEILING SYSTEM  
Emre Gonulcu <sup>1</sup>, Furkan Calim <sup>1</sup>, M. Ali Toprak <sup>1</sup>, Tansu Gokce <sup>2</sup>, Yavuz Durgun <sup>1</sup>,  
Ercan Yuksel <sup>1</sup>

Istanbul Technical University Civil Engineering Istanbul-Turkey <sup>1</sup> University of  
Bristol Civil Engineering Bristol-United Kingdom <sup>2</sup>

10:00-11:00

1373 - PROGRESSIVE COLLAPSE ANALYSIS OF STEEL STRUCTURES ON  
ELASTIC FOUNDATION: PART-2. NONLINEAR DYNAMIC PROCEDURES

Saffet Kılıçer <sup>1</sup>, Korhan Ozgan <sup>1</sup>, Ayse T. Daloglu <sup>1</sup>, S. Banu İkizler <sup>1</sup>  
Engineering Department of civil engineering Artvin-Turkey <sup>1</sup>

1403 - EVALUATION OF EARTHQUAKE RISK IN DETERMINING THE  
LOCATIONS OF WIND TRIBUNE PLANTS

Anıl Özdemir <sup>1</sup>, Murat Pınarlık <sup>1</sup>  
Gazi University Civil Engineering Ankara-Turkey <sup>1</sup>

1275 - CONSTITUTIVE MODELING OF UNREINFORCED MASONRY WALLS  
WITH AND WITHOUT OPENINGS

Metin Karşlıoğlu <sup>1</sup>, Zeynep Unsal Aslan <sup>1</sup>, Bilge Doran <sup>1</sup>, Cuneyt Vatansever <sup>2</sup>  
Yıldız Technical University Civil Engineering Istanbul-Turkey <sup>1</sup> İstanbul Technical  
University Civil Engineering Istanbul-Turkey <sup>2</sup>

11:00-11:15

**Break**



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Hall 2

## Session 17

### Mechanics

1077 - BEHAVIOR OF LAMINATED CURVED GLASS BEAMS SUBJECTED TO INITIAL DELAMINATION

Ebru Dural <sup>1</sup>

Adnan Menderes University Civil Engineering Aydın-Turkey <sup>1</sup>

1086 - AN EXPERIMENTAL STUDY OF THE DYNAMIC BEHAVIOR OF LAMINATED GLASS SUBJECTED TO IMPACT LOADING

Ebru Dural <sup>1</sup>, Mehmet Enes Aksüllü <sup>1</sup>, Damla Okan <sup>1</sup>

Adnan Menderes University Civil Engineering Aydın-Turkey <sup>1</sup>

1092 - PROGRESSIVE FAILURE ANALYSIS OF FIBER REINFORCED COMPOSITES USING CONTINUUM DAMAGE MECHANICS AND PUCK'S FAILURE CRITERION

Süleyman Yaşayanlar <sup>1</sup>, İzzet Özdemir <sup>1</sup>

11:15-12:45

Izmir Institute of Technology Civil Engineering İzmir-Turkey <sup>1</sup>

1096 - B-SPLINES BASED TETRAHEDRA ELEMENTS FOR INCOMPRESSIBLE ELASTICITY AND ELASTO-PLASTICITY

Bekir Kaçmaz <sup>1</sup>, İzzet Özdemir <sup>1</sup>

Izmir Institute of Technology Civil Engineering İzmir-Turkey <sup>1</sup>

1074 - SIZE EFFECT ON DIRECT SHEAR RESPONSE OF CONCRETE STRUCTURES

Lokman Işık <sup>1</sup>, Şenol Ataoğlu <sup>1</sup>, Ömer Tuğrul Turan <sup>2</sup>, Ahmet Abdullah Dönmez <sup>1</sup>

İstanbul Teknik Üniversitesi Civil Engineering Faculty ISTANBUL-Turkey <sup>1</sup>

İstanbul Teknik Üniversitesi Disaster Management Institute ISTANBUL-Turkey <sup>2</sup>

1408 - ROCKING RESPONSE OF RIGID BODIES

Mahir Çetin <sup>1</sup>, Ebru Toy <sup>1</sup>, Eren Uçkan <sup>2</sup>

Boğaziçi University Earthquake Engineering İstanbul-Turkey <sup>1</sup> Alanya Alaaddin

Keykubat University Earthquake Engineering Antalya-Turkey <sup>2</sup>

12:45-13:15

**Lunch**



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Hall 2

## Session 20 Structures

- 1170 - FINITE ELEMENT APPLICATIONS OF STONE MASONRY WALLS  
Yasin Murat Hothot<sup>1</sup>, Burcu Dinç-Şengönül<sup>1</sup>, Bilge Doran<sup>1</sup>, Nabi Yüzer<sup>1</sup>  
Yıldız Technical University Civil Engineering Istanbul-Turkey<sup>1</sup>
- 15:15-16:15 1005 - THE EFFECT OF FIBER HYBRIDIZATION ON THE SPLICE LENGTH OF  
TENSILE REINFORCING BARS IN CONVENTIONAL CONCRETE  
Mahmut Bassurucu<sup>1</sup>, Kazim Türk<sup>2</sup>  
Malatya Turgut Ozal University Construction Technology Malatya-Turkey<sup>1</sup>  
Inonu University Civil Engineering Malatya-Turkey<sup>2</sup>
- 1254 - THE EFFECT OF GROUND MOTION RECORD SELECTION STRATEGIES  
ON STRUCTURAL RESPONSE OF AN EXISTING MID-RISE RC BUILDING  
Ahmet Demir<sup>1</sup>, Mehmet Palanci<sup>2</sup>, Ali Haydar Kayhan<sup>3</sup>  
Bolu Abant İzzet Baysal University Civil Engineering Bolu-Turkey<sup>1</sup> Istanbul  
Arel University Civil Engineering Istanbul-Turkey<sup>2</sup> Pamukkale University Civil  
Engineering Denizli-Turkey<sup>3</sup>
- 1270 - HOW DOES THE ROTATED DATA EFFECT A RC BUILDING?  
Soukaina MELLOUK<sup>1</sup>, Ebru HARMANDAR<sup>1</sup>  
Muğla university Civil engineering Muğla-Turkey<sup>1</sup>

16:15-16:30

**Break**

## Session 23 Structures

- 1308 - EVALUATION OF SEISMIC INPUT ENERGY DISTRIBUTION IN  
MOMENT FRAMES  
Furkan Calim<sup>1</sup>, Ahmet Gullu<sup>2</sup>, Ercan Yuksel<sup>1</sup>  
Istanbul Technical University Civil Engineering Istanbul-Turkey<sup>1</sup> Istanbul Gedik  
University Civil Engineering Istanbul-Turkey<sup>2</sup>
- 16:30-17:30 1321 - INVESTIGATION OF PARAMETERS ON THE FRAGILITY RESPONSE OF  
EXISTING BUILDINGS ACCORDING TO DIFFERENT SEISMIC CODES  
Cigdem Cirak Karakas<sup>1</sup>, Fahrettin Kuran<sup>2</sup>, Guler Guvensoy<sup>1</sup>, Mehmet Palanci<sup>3</sup>,  
Sevket Murat Senel<sup>1</sup>  
Pamukkale University Civil Engineering Denizli-Turkey<sup>1</sup> Istanbul Gelişim  
University Civil Engineering  
Istanbul-Turkey<sup>2</sup> Istanbul Arel University Civil  
Engineering Istanbul-Turkey<sup>3</sup>
- 1343 - INVESTIGATION OF SHEAR DEFICIENT RC BEAMS REPAIRED WITH  
FRP STRIPS  
Anil Özdemir<sup>1</sup>, Nalan Kaya<sup>1</sup>, Yağmur Kopruman<sup>1</sup>  
Gazi University Civil Engineering Ankara-Turkey<sup>1</sup>
- 1351 - A MACHINE LEARNING APPROACH UTILIZING DIFFERENT FEATURES  
FOR STRUCTURAL DAMAGE DETECTION  
Burcu Gunes<sup>1</sup>, Efan Ok<sup>2</sup>  
Istanbul Technical University Dept. of Civil Eng. Istanbul-Turkey<sup>1</sup> Rise Eng and  
Consultancy Istanbul-Turkey<sup>2</sup>

17:30-17:45

**Break**



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## Session 26 Building Materials

1452 - FORMATION OF NANOCRYSTALLINE BORON-CEMENT POWDERS BY MECHANICAL ALLOYING TECHNIQUE

C. Kursun <sup>1</sup>, I. Dasoluk <sup>1</sup>, M. Gogebakan <sup>1</sup>

Kahramanmaraş Sutcu Imam University Department of Physics Kahramanmaraş-Turkey <sup>1</sup>

1305 - EFFECTS OF TREATED SEWAGE WATER ON THE PERFORMANCE OF CONCRETE

Gülnur Tümer <sup>1</sup>

Eastern Mediterranean University Civil Engineering Gazimağusa-Northern Cyprus <sup>1</sup>

1338 - DEVELOPMENT OF SYNTHETIC WOLLASTONITE FROM DIFFERENT WASTE MATERIALS BY A SPECIAL METHOD

Hatice Öznur Öz <sup>1</sup>, Muhammet Güneş <sup>1</sup>, Hasan Erhan Yücel <sup>1</sup>

Niğde Ömer Halisdemir University Civil Engineering Niğde-Turkey <sup>1</sup>

17:45-19:30

1360 - INFLUENCE OF RECYCLED POLYETHYLENE TEREPHTHALATE FIBRES ON THE TENSILE PROPERTIES OF CONCRETE

Can Sayı <sup>1</sup>

Eastern Mediterranean University Civil Engineering Gazimağusa-Northern Cyprus <sup>1</sup>

1441 - THE USAGE OF DIFFERENT TYPES OF FIBER REINFORCING IN THE MECHANIC BEHAVIOUR OF THE CONCRETE

F. A. Sahin <sup>1</sup>, H. Yildirim <sup>1</sup>

Istanbul Technical University Faculty of Civil Engineering Istanbul-Turkey <sup>1</sup>

1446 - RHEOLOGY OF HIGH STRENGTH GEOPOLYMER COMPOSITES AND ITS APPLICATION ON MASONRY WALL USING SHOTCRETE

Muslum Murat MARAS <sup>1</sup>

Inonu University, Faculty of Engineering Department of Civil Engineering Malatya-Turkey <sup>1</sup>

1447 - DEVELOPMENT OF A FRICTIONAL AND ELASTOMERIC SEISMIC JOINT APPARATUS FOR USE IN BUILDINGS

O. Yılmaz <sup>1</sup>, S. Bekiroğlu <sup>1</sup>

YTU Department of Civil Engineering Istanbul-Turkey <sup>1</sup>





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Hall 3

Session 15

Construction Management

1167 - PREVENTION OF UNBALANCED BIDS: A COUNTER STRATEGY

Firat Dogu Akin <sup>1</sup>, Atilla Damci <sup>1</sup>, Serhat Yaşar <sup>1</sup>

Istanbul Technical University Civil Engineering Istanbul-Turkey <sup>1</sup>

1287 - INVESTIGATING THE IMPACT OF BUILDING ZONE ASSUMPTIONS  
ON ENERGY PERFORMANCE RESULTS

Hamed Aslanipour <sup>1</sup>, Gülben Çalış <sup>1</sup>

10:00-11:00 Ege University Department of Civil Engineering İZMİR-Turkey <sup>1</sup>

1232 - INVESTIGATING INDOOR ENVIRONMENTAL COMFORT  
CONDITIONS AGAINST STANDARDS IN AN EDUCATIONAL BUILDING

Ezgi Kocaman <sup>1</sup>, Onurcan Onur <sup>1</sup>, Gülben Çalış <sup>1</sup>

Ege University Department of Civil Engineering İZMİR-Turkey <sup>1</sup>

1432 - DETERMINATION OF OCCUPATIONAL SAFETY RISKS IN COASTAL  
CONSTRUCTION

D. I. Yılmaz <sup>1</sup>, D. Artan <sup>1</sup>

11:00-11:15 Istanbul Technical University Department of Civil Engineering İstanbul-Turkey <sup>1</sup>

**Break**



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Hall 3

## Session 18 Transportation

1095 - EVALUATION OF THE PERFORMANCE OF SEVERAL MACHINE LEARNING ALGORITHMS FOR VEHICLE DETECTION ON HIGHWAYS BY USING HOG FEATURES

Morteza Ahmadpur <sup>1</sup>, İpek Şen <sup>2</sup>, İlgin Gökaşar <sup>1</sup>

Bogazici University Civil Engineering Istanbul-Turkey <sup>1</sup> Istanbul Bilgi University Electrical and Electronics Engineering Istanbul-Turkey <sup>2</sup>

1112 - MODELING OF THE EFFECT OF AUTONOMOUS VEHICLES ON UNINTERRUPTED FLOW CONDITIONS: CASE OF ISTANBUL

Hikmet Gamze Alpergin <sup>1</sup>, Selim Dünder <sup>1</sup>, Serhan Tanyel <sup>2</sup>, İlgin Gökaşar <sup>3</sup>

Istanbul Okan University Civil Engineering Istanbul-Turkey <sup>1</sup> 9 Eylül University Civil Engineering Izmir-Turkey <sup>2</sup> Bogazici University Civil Engineering Istanbul-Turkey <sup>3</sup>

1113 - TRANSITION TOWARDS SUSTAINABLE URBAN MOBILITY PLANS

Güneş Cansız <sup>1</sup>, Mustafa Sinan Yardım <sup>2</sup>, İmre S. Ersoy <sup>3</sup>

Wri Turkey Sustainable Cities - İstanbul-Turkey <sup>1</sup> Ytu Civil Eng. Dept İstanbul-Turkey <sup>2</sup> Marmara Univ. European Research Institution İstanbul-Turkey <sup>3</sup>

11.15-13.00

1185 - A SPATIAL ANALYSIS FOR DETECTING HIGHWAY TRAFFIC ACCIDENT HOTSPOTS – CASE OF ISTANBUL

Selim Dünder <sup>1</sup>, Yağmur Soydan <sup>1</sup>, Mustafa Sinan Yardım <sup>2</sup>

Istanbul Okan University Civil Engineering Istanbul-Turkey <sup>1</sup> Yıldız Technical University Civil Engineering Istanbul-Turkey <sup>2</sup>

1379 - ON STRATEGIES IMPROVING ACCURACY OF SPEED PREDICTION FROM FLOATING CAR DATA

Korhan Kocamaz <sup>1</sup>, Hediye Tuydes Yaman <sup>1</sup>, Kağan Tuncay <sup>1</sup>, Büşra Çınar <sup>2</sup>

Middle East Technical University Civil Engineering Ankara-Turkey <sup>1</sup> Parabol Software Ankara-Turkey <sup>2</sup>

1381 - DEVELOPING A LIGHTWEIGHT AND USER-FRIENDLY ANDROID APPLICATION TO COLLECT CONTINUOUS TRAFFIC DATA

Berke Kaan Ulgen <sup>1</sup>, İlgin Gokasar <sup>1</sup>

Bogazici University Department of Civil Engineering Istanbul-Turkey <sup>1</sup>

1445 - INVESTIGATION OF THE USABILITY OF BEEWAX IN BITUMEN MODIFICATION

N. Şahan <sup>1</sup>, E. Çavdar <sup>2</sup>, A. Kumandaş <sup>3</sup>, Ş. Oruç <sup>2</sup>

Ahi Evran University Department of Civil Engineering Kırşehir-Turkey <sup>1</sup> Karadeniz

Technical University Department of Civil Engineering Trabzon-Turkey <sup>2</sup> Ondokuz

Mayıs University Department of Civil Engineering Samsun-Turkey <sup>3</sup>

13:00-13:30

**Lunch**



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Hall 3

## Session 21 Geotechnics

- 1280 - STABILIZING A DEEP EXCAVATION IN SOFT CLAY IZMIR/MAVISEHIR CASE STUDY  
İpek Yakıcı Kurtarslan <sup>1</sup>, Sami Oğuzhan Akbaş <sup>2</sup>  
Kilci Engineering Civil Engineering Ankara-Turkey <sup>1</sup> Gazi University Civil Engineering Ankara-Turkey <sup>2</sup>
- 15:15-16:15 1235 - SHALLOW FOUNDATION ANALYSIS BY SMOOTHED PARTICLE HYDRODYNAMICS METHOD  
Volkan Emren <sup>1</sup>, Kağan Tuncay <sup>1</sup>  
Middle East Technical University Civil Engineering Ankara-Turkey <sup>1</sup>
- 1250 - DISPLACEMENT BASED DESIGN OF INTERNAL SHORING SYSTEMS IN GRANULAR SOILS  
Bünyamin Odabaşı <sup>1</sup>, Sami Arsoy <sup>1</sup>  
Civil Engineering Civil Engineering Kocaeli-Turkey <sup>1</sup>
- 1307 - INTERFACE SHEAR BEHAVIOR OF SOIL-PVC AND SOIL-HDPE  
İnci Develioglu <sup>1</sup>, Hasan Fırat Pulat <sup>1</sup>  
İzmir Katip Çelebi University Civil Engineering İzmir-Turkey <sup>1</sup>
- 16:15-16:30 **Break**



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Hall 3

## Session 24 Geotechnics

1320 - NEW PROJECT MANAGEMENT SOFTWARE IN GEOTECHNICAL ENGINEERING

Alp Gökalp <sup>1</sup>

Kaskaş A.ş. Genel Müdürlük Istanbul-Turkey <sup>1</sup>

1357 - EFFECT OF POLYPROPYLENE FIBERS ON PHYSICAL AND STRENGTH PROPERTIES OF LOCAL CLAYEY SOIL

Talal Taleb <sup>1</sup>, Yeşim Sema Unsever <sup>1</sup>

Bursa Uludağ University Civil Engineering Gaziantep-Turkey <sup>1</sup>

1281 - A JOINT EFFORT TO REDUCE HAZARDS TO THE ENVIRONMENT AND WATER RESOURCES BY REHABILITATING OPEN DUMPS

Selcuk Toprak <sup>1</sup>, Banu Cetin <sup>2</sup>, Osman Nuri Agdag <sup>3</sup>, Elmo De Angelis <sup>4</sup>, Marcin

Gorski <sup>5</sup>, Anna Kujumdzieva <sup>6</sup>, Ventsislava Petrova <sup>7</sup>, Casen Panaitescu <sup>8</sup>,

Ramazan Degirmenci <sup>9</sup>, Davide Frulla <sup>10</sup>, Roda Gokce Yilmaz Cincin <sup>3</sup>, Cigdem

Balcık <sup>2</sup>, Dorin Bombos <sup>11</sup>, Trayana Nedeva <sup>7</sup>, Yavuz Kaplan <sup>12</sup>, Oguz Dal <sup>1</sup>,

Kylene De Angelis <sup>13</sup>, Ferda Agdag <sup>9</sup>, Alexander Savov <sup>14</sup>, Pavlina Mitkova <sup>15</sup>

16:30-17:30

Gebze Technical University Civil Engineering Kocaeli-Turkey <sup>1</sup> Gebze Technical

University Environmental Engineering Kocaeli-Turkey <sup>2</sup> Pamukkale University

Environmental Engineering Denizli-Turkey <sup>3</sup> Training 2000 Director Mondavio-

Italy <sup>4</sup> Silesian University of Technology Civil Engineering Gliwice-Poland <sup>5</sup>

Research and Development Biotech Environmental Sofia-Bulgaria <sup>6</sup> Sofia

University St. Kliment Ohridski Biotechnology Sofia-Bulgaria <sup>7</sup> Petroleum-Gas

University of Ploiesti Environmental Protection Ploieşti-Romania <sup>8</sup> Denizli

Metropolitan Municipality Environmental Protection and Control Denizli-

Turkey <sup>9</sup> Fano Municipality EU Projects Management Fano-Italy <sup>10</sup> Petroleum-

Gas University of Ploiesti Chemical Ploieşti-Romania <sup>11</sup> Pamukkale University

Mechanical Engineering Denizli-Turkey <sup>12</sup> Training 2000 EU Projects Mondavio-

Italy <sup>13</sup> Research and Development Biotech Economics and Management Sofia-

Bulgaria <sup>14</sup> Research and Development Biotech Management Sofia-Bulgaria <sup>15</sup>

1262 - NUMPY-BASED NUMERICAL SOLUTION OF FAILURE SURFACE OF BASIC HYPOPLASTIC MODELS

Muzaffer Kerem Ertek <sup>1</sup>, Gökhan Demir <sup>1</sup>, Utku Köktan <sup>1</sup>

Ondokuz Mayıs University, Faculty of Engineering Civil Engineering Samsun-

Turkey <sup>1</sup>

17:30-17:45

**Break**



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Hall 3

## Session 27 Transportation

1215 - EVALUATION OF THE FACTORS AFFECTING THE TIME OF DAY CHOICES OF THE ELDERLY FOR PUBLIC TRANSPORTATION USE

Gokasar Ilgin <sup>1</sup>, Gunay Gurkan <sup>2</sup>, Karakurt Ahmet <sup>1</sup>

Bogazici University Department of Civil Engineering Istanbul-Turkey <sup>1</sup> Dogus University Civil Engineering Department Istanbul- <sup>2</sup>

1341 - UTILIZATION OF GRANITE FLOORING TILE WASTE IN ASPHALT PAVEMENTS

Julide Oner <sup>1</sup>

Usak University, Engineering Faculty Civil Engineering Usak-Turkey <sup>1</sup>

1383 - COMPREHENSIVE EVALUATION OF THE EFFECTS OF VSL AND LCS IMPLEMENTATIONS WITH CONNECTED AUTONOMOUS VEHICLES

Ilgin Gokasar <sup>1</sup>, Alperen Timurogullari <sup>1</sup>, Sarp Semih Ozkan <sup>1</sup>

Bogazici University Department of Civil Engineering Istanbul-Turkey <sup>1</sup>

17:45-19:30

1392 - DECISION CRITERIA ANALYSIS WITH ANALYTIC HIERARCHICAL PROCESS FOR ELECTRIC BUS IMPLEMENTATIONS

M. Gazi Tulu <sup>1</sup>, Ilgin Gokasar <sup>1</sup>, Sarp Semih Ozkan <sup>1</sup>

Bogazici University Department of Civil Engineering Istanbul-Turkey <sup>1</sup>

1396 - THE EVALUATION OF THE EFFECT OF AUTONOMOUS VEHICLES ON THE TRAFFIC SPEED DISTRIBUTION OF THE LANES IN AN INCIDENT CASE

Ilgin Gokasar <sup>1</sup>, Alperen Timurogullari <sup>1</sup>, Sarp Semih Ozkan <sup>1</sup>, Elif Kozan <sup>2</sup>, Agah Kozan <sup>2</sup>

Bogazici University Department of Civil Engineering Istanbul-Turkey <sup>1</sup> Ege University Department of Statistics İzmir-Turkey <sup>2</sup>

1397 - THE EVALUATION OF THE EFFECTS OF COVID19 RESTRICTIONS ON THE NUMBER OF VEHICLES AND THE AIR POLLUTANTS IN ISTANBUL

Ilgin Gokasar <sup>1</sup>, Rahmi Sahin <sup>1</sup>, Sarp Semih Ozkan <sup>1</sup>

Bogazici University Department of Civil Engineering Istanbul-Turkey <sup>1</sup>

1425 - INVESTIGATION OF THE EFFECT OF CREATING CO-WORKING PLACES ON BICYCLE TRANSPORTATION

Serra Garipağaoğlu <sup>1</sup>, Sami Cankat Tanriverdi <sup>1</sup>, Büşra Merve Duman <sup>1</sup>

İstanbul Büyükşehir Belediyesi Ulaşım Planlama Müdürlüğü İstanbul-Turkey <sup>1</sup>

1272 - THE EFFECTS OF NANO SIO<sub>2</sub> ON PHYSICAL PROPERTIES OF BITUMEN

Taylan Günay <sup>1</sup>, Perviz Ahmedzade <sup>1</sup>

Dr, Ege University Department of Civil Engineering Izmir-Turkey <sup>1</sup>



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## Hall 1

### Keynote 7

**"A new confinement model for high-strength concrete tied columns"**

**Orhun Köksal**

**Çanakkale Onsekiz Mart University**

**Department of Civil Engineering**

09:00-09:45

09:45-10:00

**Break**

### Session 28

#### Mechanics

1123 - EXPERIMENTAL AND NUMERICAL INVESTIGATION OF HYBRID FIBER REINFORCED CONCRETE BEAMS UNDER THREE AND FOUR-POINT BENDING

Yonca Yaşayanlar<sup>1</sup>, Selçuk Saatçı<sup>1</sup>, Sarra Aloui<sup>3</sup>

Izmir Institute of Technology Civil Engineering Izmir-Turkey<sup>1</sup>

1336 - VIBRATION MITIGATION IN A CONVENTIONAL RAILWAY BRIDGE USING POUNDING TUNED MASS DAMPERS

Mehmet Akif Yıldız<sup>1</sup>, Yıldırım Serhat Erdoğan<sup>1</sup>

Yıldız Technical University, Civil Engineering Department, 34220, Esenler, Istanbul Civil Engineering İstanbul-Turkey<sup>1</sup>

10:00-11:00

1354 - ACOUSTIC EMISSION-BASED DAMAGE ANALYSIS OF FIBER REINFORCED CONCRETE

Sena Tayfur<sup>1</sup>, Ninel Alver<sup>1</sup>

Ege University Civil Engineering İzmir-Turkey<sup>1</sup>

1233 - FREE VIBRATION ANALYSIS OF AXIALLY FG STRAIGHT BEAMS ON PASTERNAK FOUNDATION

Yonca Bab<sup>1</sup>, Merve Ermis<sup>2</sup>, Akif Kutlu<sup>1</sup>, Nihal Eratlı<sup>1</sup>, Mehmet H. Omurtag<sup>3</sup>

Istanbul Technical University Civil Engineering Istanbul-Turkey<sup>1</sup> Kırklareli University Civil Engineering Kırklareli-Turkey<sup>2</sup> Istanbul Medipol University Civil Engineering Istanbul-Turkey<sup>3</sup>

11:00-11:15

**Break**



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Hall 1

## Session 31 Geotechnics

1436 - COMPARING DIFFERENT FREQUENCY GPR ANTENNAS FOR TUNNEL HEALTH ASSESSMENT

Can Mungan <sup>1</sup>, Gokhan Kilic <sup>2</sup>

Izmir University of Economics Dept. of Biomedical Engineering İzmir-Turkey 1

Izmir University of Economics Dept. of Civil Engineering İzmir-Turkey 2

1346 - RESPONSE OF MONOPILE OFFSHORE WIND TURBINE FOUNDATIONS IN LIQUEFIABLE SOILS UNDER KINEMATIC LOADING CONDITIONS

Sezgin Sarak <sup>1</sup>, Gürkan Özden <sup>2</sup>

Gebze Technical University Civil Engineering Kocaeli-Turkey <sup>1</sup> Dokuz Eylül

University Civil Engineering İzmir-Turkey <sup>2</sup>

11:15-12:45

1356 - DETERMINATION OF GROUND AMPLIFICATION BY GROUND RESPONSE ANALYSIS

Mesut Gökoğlu <sup>1</sup>, Murat Ergenekon Selçuk <sup>1</sup>

Yıldız Technical University Geotechnical Manisa-Turkey <sup>1</sup>

1372 - INVESTIGATION OF SKIN FRICTION BY A OSTERBERG CELL TEST

Koray Uzunoğlu <sup>1</sup>, Murat Tonaroğlu <sup>1</sup>, Murat Ergenekon Selçuk <sup>1</sup>

Yıldız Technical University Civil Engineering İstanbul-Turkey <sup>1</sup>

1384 - EFFECTS OF MOLDS OF DIFFERENT WIDHT ON THE PERMEABILITY AND CALCITE PERCENTAGES OF SAND SOIL BY MICROBIAL CARBONATE PRECIPITATION

Harun AKOÇUZ <sup>1</sup>

Erzincan Binali Yıldırım University Civil Engineering Erzincan-Turkey <sup>1</sup>

1453 - INVESTIGATION OF DEFORMATION BEHAVIOR OF CLAY FILLS WITH DIFFERENT COMPACTION MOISTURE CONTENTS

M. T. Ozsoy<sup>1</sup>, P. Ozener<sup>1</sup>

Department of Civil Engineering, YTU, Istanbul, Turkey <sup>1</sup>

12:45-13:15

**Lunch**



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Hall 1

Session 34

Hydraulics

1375 - EVALUATING THE POTENTIAL OF GRIDDED PRECIPITATION DATASETS FOR REPRODUCING STREAMFLOW IN A MOUNTAINOUS BASIN

Hamed Hafizi <sup>1</sup>, Ali Arda Sorman <sup>1</sup>

Eskisehir Technical University-Institute of Graduate School of Sciences Civil Engineering Eskisehir-Turkey <sup>1</sup>

1398 - ASSESSMENT OF REMOTELY SENSED DIGITAL ELEVATION MODELS (DEMS) FOR FLOOD MODELING STUDIES: A CASE STUDY IN BATMAN RIVER

Gökçen Uysal <sup>1</sup>, Enver Taşçı <sup>1</sup>, Serhat Kan <sup>1</sup>, Kaan Uğurlu <sup>1</sup>, Ali Arda Şorman <sup>1</sup>, Kerim Ergin <sup>2</sup>

Eskisehir Technical Civil Engineering Eskisehir-Turkey <sup>1</sup>

State Hydraulic Works, 3<sup>rd</sup> Regional Directorate, Eskisehir, Turkey<sup>2</sup>

1399 - EVALUATING SATELLITE PRECIPITATION PRODUCT DATA PRODUCED BY SOIL MOISTURE ACROSS TURKEY

Aynur Şensoy <sup>1</sup>, Gökçen Uysal <sup>1</sup>, Ahmet Jaber <sup>1</sup>

Eskişehir Technical University, ESTU Civil Eng Eskişehir-Turkey <sup>1</sup>

1073 - COMPARISON OF 2008 AND 2020 TURKISH STANDARDS (EARTHQUAKE TECHNICAL REGULATION ON COASTAL AND HARBOR STRUCTURES, RAILWAYS AND AIRPORTS CONSTRUCTION)

Tuğçe Celepoğlu <sup>1</sup>, Yeşim Çelikoğlu <sup>1</sup>, Yalçın Yüksel <sup>1</sup>

Yildiz Technical University Civil Engineering İstanbul-Turkey <sup>1</sup>

13:15-14:15

14.15-14.30

**Break**





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## Hall 1

14:30-15:15 **Keynote 8**  
**“Resilience and Sustainability of Civil Infrastructure: Bridging the Gap”**  
**Moncef L. Nehdi**  
**Western University-Canada**  
**Department of Civil and Environmental Engineering**

15:15-15:30 **Break**

15:30-16:15 **Keynote 9**  
**Erol Tutumluer**  
**University of Illinois at Urbana-Champaign**  
**Department of Civil and Environmental Engineering (CEE)**

16:15-16:30 **Break**

## Session 37 Structures

1291 - THE EFFECT OF INFILL WALLS ON THE CAPACITY AND BEHAVIOR OF RC WIDE BEAM FRAMES  
Ornela Lalaj Şen <sup>1</sup>, Mehmet Çevik <sup>2</sup>, Ali Haydar Kayhan <sup>3</sup>  
Izmir Katip Çelebi University Civil Engineering Izmir-Turkey <sup>1</sup> Izmir Katip Çelebi University Mechanical Engineering Izmir-Turkey <sup>2</sup> Pamukkale University Civil Engineering Denizli-Turkey <sup>3</sup>

1296 - A CASE STUDY ON THE STRUCTURAL DESIGN OF REINFORCED CONCRETE HIGHWAY UNDERPASS PROJECT AGAINST HIGH GROUNDWATER LEVEL  
Mehmet Sefa Orak <sup>1</sup>  
Istanbul Technical University Civil Engineering Istanbul-Turkey <sup>1</sup>

1378 - PREDICTION OF NONLINEAR DRIFT DEMANDS FOR BUILDINGS WITH RECURRENT NEURAL NETWORK  
Korhan Kocamaz <sup>1</sup>, Barış Binici <sup>1</sup>, Kağan Tuncay <sup>1</sup>  
Middle East Technical University Civil Engineering Ankara-Turkey <sup>1</sup>

1437 - BRIDGE HEALTH MONITORING SYSTEMS VIA WIRELESS SENSOR NETWORK  
Can Mungan <sup>1</sup>, Gokhan Kilic <sup>2</sup>  
Izmir University of Economics Dept. of Biomedical Engineering Izmir-Turkey <sup>1</sup>, Izmir University of Economics Dept. of Civil Engineering Izmir-Turkey <sup>2</sup>

17:30-17:45 **Closing Speech**



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Hall 2

## Session 29 Structures

1439 - MITIGATION OF EARTHQUAKE-INDUCED POUNDING EFFECTS ON ADJACENT REINFORCED CONCRETE BUILDINGS

Sueda Altan <sup>1</sup>, Özgür Avşar <sup>1</sup>

ESTU Department of Civil Engineering Eskişehir-Turkey <sup>1</sup>

1440 - REPRESENTATION OF EARTHQUAKE GROUND MOTION INCIDENCE ANGLE IN NONLINEAR DYNAMIC ANALYSIS OF HIGHWAY BRIDGES

S. Ateş <sup>1</sup>, Ö. Avşar <sup>1</sup>

ESTU Department of Civil Engineering Eskişehir-Turkey <sup>1</sup>

10:00-11:00

1142 - ASSESSMENT OF WATER INTAKE SYSTEM FOR DAMS AND DESIGN RECOMMENDATIONS

Egemen Gökalp <sup>1</sup>, Birkan Boyraz <sup>2</sup>, Osman Bulut <sup>3</sup>, Ali Sarı <sup>3</sup>

Science and Technology Institute, Istanbul Technical University, Istanbul / Turkey <sup>1</sup>

Science and Technology Institute, Istanbul Technical University, Istanbul / Turkey <sup>2</sup>

Department of Civil Engineering, Istanbul Technical University, Istanbul / Turkey <sup>3</sup>

1388 - NUMERICAL AND EXPERIMENTAL PERFORMANCE EVALUATION OF REPLACEABLE FUSE ELEMENTS UNDER CYCLIC LOADING

Cihan Soydan <sup>1</sup>, Hasan Özkaynak <sup>2</sup>, Melih Sürmeli <sup>3</sup>, Erkan Şenol <sup>2</sup>, Hakan Saruhan <sup>4</sup>, Ercan Yüksel <sup>4</sup>

Tekirdağ Namık Kemal University Civil Engineering Department Tekirdağ-

Turkey <sup>1</sup> Beykent University Civil Engineering Department İstanbul-Turkey <sup>2</sup>

Bursa Technical University Civil Engineering Department Bursa-Turkey <sup>3</sup> İstanbul

Technical University Civil Engineering Department İstanbul-Turkey <sup>4</sup>

11:00-11:15

**Break**



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Hall 2

Session 32

Construction Management

1442 - ASSESSING CONTRACTOR-RELATED DELAY FACTORS IN CONSTRUCTION PROJECTS

Emre Caner Akçay <sup>1</sup>

Atılım University Civil Engineering Department Ankara-Turkey <sup>1</sup>

1433 - DIFFERING APPROACHES OF CLIENTS, CONSULTANTS AND CONTRACTORS TO THE METHODS OF MINIMISING CONSTRUCTION DELAYS

Mehmedali Egemen <sup>1</sup>

European University of Lefke Faculty of Engineering, Department of Civil Engineering Lefke-Turkey <sup>1</sup>

1015 - GEOTECHNICAL RISK MANAGEMENT USING FUZZY TOPSIS APPROACH

11:15-12:45

Kerim Koc <sup>1</sup>, Asli Pelin Gurgun <sup>1</sup>

Yildiz Technical University Civil Engineering Department Istanbul-Turkey <sup>1</sup>

1387 - SUSTAINABILITY ANALYSIS FOR THE CONSTRUCTION OF TEMPORARY HOUSES

Tuğba Erzurum <sup>1</sup>, Önder Halis Bettemir <sup>1</sup>

Inonu University Civil Engineering Malatya-Turkey <sup>1</sup>

1353 - DETERMINATION OF THE AWARENESS LEVEL OF CONSTRUCTION PRACTITIONERS ABOUT CONCEPTS OF BIM

Ozan Okudan <sup>1</sup>, Cenk Budayan <sup>1</sup>

Yildiz Technical University Civil Engineering Istanbul-Turkey <sup>1</sup>

1405 - IMPACT ASSESSMENT OF INFORMATION MODELING'S LEVEL OF DEVELOPMENT (LOD) ON ENERGY ANALYSIS OF HOUSES

Farrukh Arif <sup>1</sup>, Muhammad Wasay Uz Zaman <sup>1</sup>

NED University of Engineering and Technology Civil Engineering Karachi-Pakistan <sup>1</sup>

12:45-13:15

**Lunch**



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Hall 2

Session 35

Structures

1029 - OPERATIONAL MODAL ANALYSIS OF A BASE ISOLATED STRUCTURE  
CONSTRUCTED IN A COLD REGION

Muhammet Şahin<sup>1</sup>, Dilek Okuyucu<sup>1</sup>, Burak Şahin<sup>1</sup>, Burak Gedik<sup>1</sup>  
Erzurum Technical University Civil Engineering Erzurum-Turkey<sup>1</sup>

1141 - ASSESSMENT OF EXISTING DEFINITIONS TO ESTIMATE PROPERTIES  
OF LEAD RUBBER BEARINGS EXPOSED TO LOW TEMPERATURE

Cansu Yaşar<sup>1</sup>, Esengül Çavdar<sup>2</sup>, Gökhan Özdemir<sup>3</sup>

Institute of Graduate Programs, Eskişehir Technical University Department of  
Civil Engineering Eskişehir-Turkey<sup>1</sup> Seismic Isolator Test Laboratory, Eskişehir  
Technical University Department of Building Control, Porsuk Vocational High  
School Eskişehir-Turkey<sup>2</sup> Seismic Isolator Test Laboratory, Eskişehir Technical  
University Department of Civil Engineering Eskişehir-Turkey<sup>3</sup>

13:15-14:15

1169 - DETERMINATION OF VISCOUS DAMPER CAPACITY FOR POUNDING  
STRUCTURES BY WAVELET TRANSFORM OF SEISMIC RESPONSES

Burakcan Göker<sup>1</sup>, Elif Çağda Kandemir<sup>1</sup>

İzmir Demokrasi University Civil Engineering Department İzmir-Turkey<sup>1</sup>

1261 - STRUT AND TIE MODELING OF REINFORCED CONCRETE  
STRUCTURES

Yunus İşikli<sup>1</sup>, Barış Binici<sup>1</sup>, Kağan Tuncay<sup>1</sup>

Middle East Technical University Civil Engineering ANKARA-Turkey<sup>1</sup>



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Hall 2

## Session 38 Building Materials

1363 - THE COMPARISON OF DIFFERENT CURING TEMPERATURES ON GROUND GRANULATED BLAST-FURNACE SLAG CONCRETE

Muhammet Tekingunduz <sup>1</sup>, Cansu Colak <sup>1</sup>, Hasan Yildirim <sup>1</sup>  
Istanbul Technical University Civil Engineering Istanbul-Turkey <sup>1</sup>

1430 - EFFECT OF MICRO AND MACRO PP FIBERS ON THE RESTRAINED SHRINKAGE OF CONCRETE MIXTURES

K.M. Arslan <sup>1</sup>, M.E. Karagüler <sup>2</sup>  
ITU Department of Architecture İstanbul-Turkey <sup>1</sup> Istanbul University Faculty of Architecture İstanbul-Turkey <sup>2</sup>

16:30-17:45

1214 - MICROSTRUCTURAL AND COMPRESSIVE STRENGTH DEVELOPMENT OF PORTLAND CEMENT PASTE INCORPORATING MAGNESIUM OXIDE AFTER CONCENTRATED CARBON DIOXIDE CURING

Abdullah Huzeyfe Akca <sup>1</sup>, Siwei Ma <sup>2</sup>, Shiho Kawashima <sup>3</sup>  
Yıldız Technical University The Department of Civil Engineering İstanbul-Turkey <sup>1</sup> Purdue University Lyle School of Civil Engineering West Lafayette-United States <sup>2</sup> Columbia University The Department of Civil Engineering and Engineering Mechanics New York-United States <sup>3</sup>

1428 - METHODS ON PREVENTION OF ICE FORMATION ON PAVEMENTS USING PHASE CHANGE MATERIALS

Yuşa Şahin <sup>1</sup>  
Yozgat Bozok University Department of Civil Engineering Yozgat-Turkey <sup>1</sup>

1451 - AVAILABILITY OF ENERGIES GENERATED BY EARTHQUAKES FROM FAR FIELD IN STRUCTURES

A. C. Aydın <sup>1</sup>, O. Çelebi <sup>1</sup>  
Ataturk University Department of Civil Engineering Erzurum-Turkey <sup>1</sup>



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Hall 3

Session 30

## Construction Management

1211 - EVALUATION OF EXPANSION IN MANAGERIAL FLEXIBILITIES OF CRITICAL PATH METHOD SCHEDULING UNDER UNCERTAINTY THROUGH A RISK SIMULATION MODEL

Önder Ökmen <sup>1</sup>, Marian Bosch-Rekvelde <sup>1</sup>, Hans Bakker <sup>1</sup>

Delft University of Technology (TU Delft) Civil Engineering and Geosciences  
Delft-The Netherlands <sup>1</sup>

1234 - GLOBAL RESEARCH TRENDS ON DIGITAL TRANSFORMATION IN CONSTRUCTION INDUSTRY: A SCIENTOMETRIC ANALYSIS

10:00-11:00 Emir Nuri Yıldız <sup>1</sup>, Hande Aladağ <sup>1</sup>

Yıldız Technical University Civil Engineering Istanbul-Turkey <sup>1</sup>

1369 - RENEWABLE ENERGY REVIEW: BARRIERS TO RENEWABLE ENERGY IN DEVELOPING COUNTRIES

Busra Yucel <sup>1</sup>, Saad Mohammad <sup>1</sup>, Semra Comu <sup>1</sup>

Boğaziçi University Civil Engineering Istanbul-Turkey <sup>1</sup>

1389 - FEASIBILITY ANALYSIS OF PRINTABLE CONCRETE FOR THE CONSTRUCTION OF TEMPORARY HOUSES

Tuğba Erzurum <sup>1</sup>, Önder Halis Bettemir <sup>1</sup>, Kâzım Türk <sup>1</sup>

Inonu University Civil Engineering Malatya-Turkey <sup>1</sup>

11:00-11:15

**Break**



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Hall 3

## Session 33 Structures

1271 - FIRE PERFORMANCE OF COMPOSITE FLOOR EXPOSED TO SMOULDERING AND STANDARD FIRE

Burak Kaan Cırpıcı<sup>1</sup>, Suleyman Nazif Orhan<sup>1</sup>, Turkey Kotan<sup>1</sup>  
Erzurum Technical University Civil Engineering Erzurum-Turkey<sup>1</sup>

1282 - DEPLOYABLE STRUCTURES AND ITS APPLICATION TO TEMPORARY DISASTER SHELTERS

11:15-12:45 Abdussamet Arslan<sup>1</sup>, Zeliha Tamer<sup>1</sup>, Ömer Aldemir<sup>1</sup>  
Gazi University Civil Engineering Ankara-Turkey<sup>1</sup>

1290 - EFFECTS OF MILD STEEL LAYOUT ON SEISMIC BEHAVIOR OF NON-EMULATIVE PRECAST CONCRETE SHEAR WALLS

Bulent Erkmen<sup>1</sup>, Osman Oguzcan<sup>1</sup>  
Ozyegin University Civil Engineering Istanbul-Turkey<sup>1</sup>

1303 - EFFECT OF CONCRETE STRENGTH AND REINFORCEMENT RATIO ON THE FLEXURAL BEHAVIOR OF SINGLY REINFORCED BEAMS

Muhammed Gümüş<sup>1</sup>, Abdussamet Arslan<sup>1</sup>  
Gazi university Civil engineering Ankara-Turkey<sup>1</sup>

1355 - SENSOR FREQUENCY DEPENDENCE OF AE SIGNAL CHARACTERISTICS

Sena Tayfur<sup>1</sup>, Omair Inderyas<sup>1</sup>, Ninel Alver<sup>1</sup>  
Ege University Civil Engineering İzmir-Turkey<sup>1</sup>

14:45-13:15 **Lunch**



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## Session 36 Geotechnics

1267 - EVALUATION OF PERFORMANCE OF UNDERGRADUATE STUDENTS IN DETERMINING BASIC PARAMETERS OF SEISMIC HAZARD

Sami Arsoy <sup>1</sup>

Kocaeli University Civil Engineering Kocaeli-Turkey <sup>1</sup>

1306 - STABILIZATION OF ALLUVIAL SOIL WITH FLY ASH UNDER THE EFFECT OF FREEZE–THAW CYCLE

İrem Düzen <sup>1</sup>, Eylem Arslan <sup>1</sup>, İnci Develioglu <sup>1</sup>, Hasan Fırat Pulat <sup>1</sup>

İzmir Katip Çelebi University Civil Engineering İzmir-Turkey <sup>1</sup>

13:15-14:15

1316 - A METHODOLOGY FOR MAPPING ROCK AND CABLE BOLTS IN A 3-DIMENSIONAL TERRAIN FINITE ELEMENT MODEL

Ali Alper Saylan <sup>1</sup>, Okan Önal <sup>2</sup>, Gürkan Özden <sup>2</sup>

İzmir Katip Çelebi University Civil Engineering İzmir-Turkey <sup>1</sup> Dokuz Eylül University Civil Engineering İzmir-Turkey <sup>2</sup>

1326 - INVESTIGATION OF SEISMIC BEHAVIOR OF BURIED PIPELINES WITH ARTIFICIAL NEURAL NETWORKS ALGORITHM

İrem Toprak <sup>1</sup>, Mert Tolon <sup>2</sup>, Redvan Ghasemlounia <sup>2</sup>

İstanbul Technical University-Gedik University Civil Engineering Department İstanbul-Turkey <sup>1</sup> Gedik University Civil Engineering Department İstanbul-Turkey <sup>2</sup>

## Session 39 Hydraulics

1337 - SNOW AVALANCHE SUSCEPTIBILITY MAPPING USING WEIGHT OF EVIDENCE METHOD: A STUDY FROM UZUNGÖL BASIN

Hüseyin Akay <sup>1</sup>

1327 - COMPARISON OF MANN-KENDALL AND INNOVATIVE TREND ANALYSIS METHODS FOR TREND OF DROUGHT

Latif Doğan Dinsever <sup>1</sup>, Veysel Gümüş <sup>1</sup>

Harran University Civil Engineering Dep. Haliliye-Turkey <sup>1</sup>

16:30-17:30

1329 - COMPUTATIONAL ANALYSES ON THE EFFECT OF BLOCKAGE RATIO ON SPHERICAL CROSS FLOW HYDROKINETIC TURBINES AT PRESSURIZED PIPELINES

Muhammed Sungur Demir <sup>1</sup>, Abdullah Muratoğlu <sup>1</sup>

Batman University Civil Engineering Batman-Turkey <sup>1</sup>

1148 - APPLICATION OF COMPUTATIONAL FLUID DYNAMICS TO PREDICT PRESSURE LOSS OF TURBULENT FLOW IN ROUGH PIPE

Tevfik Denizhan Müftüoğlu <sup>1</sup>, Mehmet Sorgun <sup>1</sup>

İzmir Katip Çelebi University Civil Engineering İzmir-Turkey <sup>1</sup>