

Prof. METE KÖKEN

Personal Information

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Education Information

Doctorate, The University Of Iowa, İnşaat Ve Çevre Mühendisliği, United States Of America 2003 - 2007

Post Graduate, Middle East Technical University, Faculty of Engineering, Department of Civil Engineering, Turkey 1999 - 2002

Under Graduate, Middle East Technical University, Faculty of Engineering, Department of Civil Engineering, Turkey 1995 - 1999

Research Areas

Civil Engineering, Hydraulic, Hydraulic Structures, Bridge Hydraulics, Engineering and Technology

Academic Titles / Tasks

Professor, Middle East Technical University, Faculty Of Engineering, Department Of Civil Engineering, 2018 - Continues
Associate Professor, Middle East Technical University, Faculty Of Engineering, Department Of Civil Engineering, 2012 - 2018

Assistant Professor, Middle East Technical University, Faculty Of Engineering, Department Of Civil Engineering, 2009 - 2012

Lecturer PhD, Middle East Technical University, Faculty Of Engineering, Department Of Civil Engineering, 2008 - 2009

Research Assistant, Middle East Technical University, Faculty Of Engineering, Department Of Civil Engineering, 2003 - 2007

Academic and Administrative Experience

Birim Kalite Komisyonu Başkanı, Middle East Technical University, Faculty of Engineering, 2017 - Continues

Uygulama ve Araştırma Merkezi Yönetim Kurulu Üyesi, Middle East Technical University, Faculty of Engineering, 2016 - Continues

Middle East Technical University, Faculty of Engineering, 2016 - Continues

Department Undergraduate Education Committee, Middle East Technical University, Faculty of Engineering, Department of Civil Engineering, 2015 - Continues

Advising Theses

KÖKEN M., Numerical modelling of free surface flows on round vertical slot fish passes, Post Graduate, Ç.Koçal(Student), 2019

KÖKEN M., Numerically aided design process for piano key weirs, Post Graduate, S.Ademoğlu(Student), 2019

KÖKEN M., Numerical investigation of flow around an isolated spur dike in a curved channel, Post Graduate, E.BUDAK(Student), 2017

KÖKEN M., GÖĞÜŞ M., Determination of critical submergence depth at horizontal intakes, Post Graduate, E.HASPOLAT(Student), 2015

KÖKEN M., YANMAZ A. M. , Modeling temporal variation of scouring at dual bridge piers, Doctorate, M.SELAMOĞLU(Student), 2015

KÖKEN M., GÖĞÜŞ M., Numerical investigation of vortex formation at intake structures using flow-3D software, Post Graduate, R.MÜGE(Student), 2014

AYDIN İ., KÖKEN M., Prediction of downpull on high head gates using computational fluid dynamics, Post Graduate, M.AKIŞ(Student), 2014

KÖKEN M., GÖĞÜŞ M., Time evolution of the flow characteristics around bridge abutments during scouring process, Doctorate, B.YILDIZ(Student), 2014

KÖKEN M., Numerical simulation of free surface flows at fish passages /, Post Graduate, K.ÖZKAYA(Student), 2014

KÖKEN M., GÖĞÜŞ M., Numerical investigation of vortex formation at intake structures using flow-3d software /, Post Graduate, R.Müge(Student), 2014

KÖKEN M., AYDIN İ., Numerical investigation of hydraulic characteristics of Laleli dam spillway and comparison with physical model study, Post Graduate, E.USTA(Student), 2014

KÖKEN M., GÖĞÜŞ M., Application of collars as a scour countermeasure for spill-through abutments /, Post Graduate, K.YILMAZ(Student), 2014

KÖKEN M., Local scour characteristics around semi-circular end bridge abutments with and without collars, Post Graduate, F.TEKİN(Student), 2012

Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **Flow structure inside and around a rectangular array of rigid emerged cylinders located at the sidewall of an open channel**
KÖKEN M., Constantinescu G.
JOURNAL OF FLUID MECHANICS, vol.910, 2021 (Journal Indexed in SCI)
- II. **Approximate methodology to account for effects of coherent structures on sediment entrainment in RANS simulations with a movable bed and applications to pier scour**
Cheng Z., KÖKEN M., Constantinescu G.
ADVANCES IN WATER RESOURCES, vol.120, pp.65-82, 2018 (Journal Indexed in SCI)
- III. **Coherent structures at different contraction ratios caused by two spill-through abutments**
KÖKEN M.
JOURNAL OF HYDRAULIC RESEARCH, vol.56, no.3, pp.324-332, 2018 (Journal Indexed in SCI)
- IV. **Time-Evolution of Clear Water Scouring at Dual Bridge Piers**
Yilmaz M., Yanmaz A. M. , Köken M.
TEKNIK DERGI, vol.29, pp.8167-8184, 2018 (Journal Indexed in SCI)
- V. **Clear-water scour evolution at dual bridge piers**
Yilmaz M., Yanmaz A. M. , Köken M.
CANADIAN JOURNAL OF CIVIL ENGINEERING, vol.44, pp.298-307, 2017 (Journal Indexed in SCI)
- VI. **Application of computational fluid dynamics to predict hydrodynamic downpull on high head gates**
Köken M., Aydın İ., Şahin A.
ENGINEERING COMPUTATIONS, vol.34, pp.1191-1203, 2017 (Journal Indexed in SCI)
- VII. **Formation of air-entraining vortices at horizontal intakes without approach flow induced circulation**
Göğüş M., Köken M., Baykara A.
Journal of Hydrodynamics, vol.28, pp.102-113, 2016 (Journal Indexed in SCI)
- VIII. **Effect of spur dike length on the horseshoe vortex system and the bed shear stress distribution**
KÖKEN M., GÖĞÜŞ M.
JOURNAL OF HYDRAULIC RESEARCH, vol.53, no.2, pp.196-206, 2015 (Journal Indexed in SCI)

- IX. **Flow and turbulence structure around abutments with sloped sidewalls**
 KÖKEN M., CONSTANTINESCU G.
 Journal of Hydraulic Engineering, vol.140, no.7, 2014 (Journal Indexed in SCI)
- X. **Hydrodynamic processes, sediment erosion mechanisms, and Reynolds-number-induced scale effects in an open channel bend of strong curvature with flat bathymetry**
 KÖKEN M., Constantinescu G., Blanckaert K.
 JOURNAL OF GEOPHYSICAL RESEARCH-EARTH SURFACE, vol.118, no.4, pp.2308-2324, 2013 (Journal Indexed in SCI)
- XI. **Flow and turbulence structure around a spur dike in a channel with a large scour hole**
 Koken M., Constantinescu G.
 WATER RESOURCES RESEARCH, vol.47, 2011 (Journal Indexed in SCI)
- XII. **The structure of turbulent flow in an open channel bend of strong curvature with deformed bed: Insight provided by detached eddy simulation**
 Constantinescu G., KÖKEN M., Zeng J.
 WATER RESOURCES RESEARCH, vol.47, 2011 (Journal Indexed in SCI)
- XIII. **Coherent structures around isolated spur dikes at various approach flow angles**
 Koken M.
 JOURNAL OF HYDRAULIC RESEARCH, vol.49, no.6, pp.736-743, 2011 (Journal Indexed in SCI)
- XIV. **An investigation of the dynamics of coherent structures in a turbulent channel flow with a vertical sidewall obstruction**
 Koken M., Constantinescu G.
 PHYSICS OF FLUIDS, vol.21, no.8, 2009 (Journal Indexed in SCI)
- XV. **An investigation of the flow and scour mechanisms around isolated spur dikes in a shallow open channel: 2. Conditions corresponding to the final stages of the erosion and deposition process**
 Koken M., Constantinescu G.
 WATER RESOURCES RESEARCH, vol.44, no.8, 2008 (Journal Indexed in SCI)
- XVI. **An investigation of the flow and scour mechanisms around isolated spur dikes in a shallow open channel: 1. Conditions corresponding to the initiation of the erosion and deposition process**
 Koken M., Constantinescu G.
 WATER RESOURCES RESEARCH, vol.44, no.8, 2008 (Journal Indexed in SCI)

Articles Published in Other Journals

- I. **An investigation of coherent structures in the wake of a bridge abutment at equilibrium bed scour conditions**
 Koken M., Constantinescu G.
 Restoring Our Natural Habitat - Proceedings of the 2007 World Environmental and Water Resources Congress, 2007 (Refereed Journals of Other Institutions)

Refereed Congress / Symposium Publications in Proceedings

- I. **INVESTIGATION OF VELOCITY FIELD AROUND BRIDGE ABUTMENTS**
 YILDIZ B., KÖKEN M., GÖĞÜŞ M.
 iSTE-CE'2019- International Conference on Innovation, Sustainability, Technology and Education in Civil Engineering, 13 - 15 June 2019
- II. **A Numerical And Experimental Study on the Flow Field in an Open Channel**
 KILINÇ B. B. , AKSEN M., BAHADIROĞLU N., BOMBAR G., ELÇİ Ş., KÖKEN M., CARDOSO H. A.
 13rd International Congress on Advances in Civil Engineering, ACE, 12-14 September, 2018, Çeşme, İzmir, Türkiye, 12 - 14 September 2018

- III. **Coherent Structures in a Sharply Curved Bend with a Spur Dike at Different Configurations**
KÖKEN M., BUDAK E.
8th International Symposium in Environmental Hydraulics, 4 - 07 June 2018
- IV. **Coherent structures in a sharply curved bend with and without a spur dike.**
KÖKEN M., BUDAK E.
37th IAHR Congress, Kuala-Lumpur, Malaysia, 13 - 18 August 2017
- V. **Experimental and numerical investigation of piano key weirs.**
KÖKEN M., AYDIN İ., HASPOLAT E., ŞAHİN A. N.
37th IAHR Congress, Kuala-Lumpur, Malaysia, 13 - 18 August 2017
- VI. **NUMERICAL INVESTIGATION OF A COMBINED SYSTEM OF PIANO KEY WEIRS AND STEPPED SPILLWAY USING**
KÖKEN M., AYDIN İ.
17th Flow 3d European User's Conference, Barselona, Spain, 5 - 07 June 2017
- VII. **Comparison between RANS and DES model in a Highly-Curved Channel with an Isolated Spur-Dike.**
BUDAK E., KÖKEN M.
International Conference on Civil and Environmental Engineering, Kapadokya, Turkey, 8 - 10 May 2017
- VIII. **Determination of Critical Submergence at Horizontal Water Intakes under Symmetrical Flow Conditions**
GÖĞÜŞ M., KÖKEN M., ZALOĞLU C., HASPOLAT E.
12th International Congress on Advances in Civil Engineering, 21 - 23 September 2016
- IX. **On the spatial development of the mixing layer at the interface between open water and a region containing emerged vegetation**
KÖKEN M., CONSTANTINESCU G.
8th International Conference on Fluvial Hydraulics, 12 - 15 July 2016
- X. **Experimental Investigation of the Anti Vortex Devices of Beyhan 1 Dam and Hydroelectric Power Plant Water Intake Structure**
GÖĞÜŞ M., ALTAN SAKARYA A. B. , KÖKEN M.
World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium 2016, WMCAUS 2016, PRAG, Czech Republic, 13 - 17 June 2016
- XI. **Experimental Investigation of the Original Project of Yukari Kaleköy Dam and Hydroelectric Power Plant Spillway**
GÖĞÜŞ M., ALTAN SAKARYA A. B. , KÖKEN M.
World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium 2016, WMCAUS 2016, PRAG, Czech Republic, 13 - 17 June 2016
- XII. **Experimental investigation of the anti vortex devices of Beyhan I Dam Hydroelectric Power Plant intake structure**
GÖĞÜŞ M., ALTAN SAKARYA A. B. , KÖKEN M.
World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium, 12 - 16 June 2016
- XIII. **Experimental investigation of the original project of Yukarı Kalekoy Dam and Hydroelectric Power Plant Spillway**
GÖĞÜŞ M., ALTAN SAKARYA A. B. , KÖKEN M.
World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium, 12 - 16 June 2016
- XIV. **Experimental Investigation of the Original Project of Yukari Kalekoy Dam and Hydroelectric Power Plant Spillway**
GÖĞÜŞ M., Altan-Sakarya A. B. , KÖKEN M.
World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium (WMCAUS), Prague, Czech Republic, 13 - 17 June 2016, vol.161, pp.313-317
- XV. **Yukarı Kaleköy Barajı HES Dolusavak Hidrolik Model Deneyleeri**
GÖĞÜŞ M., ALTAN SAKARYA A. B. , KÖKEN M., DİNÇER A. E. , YAVUZ C., HASPOLAT E.
IMO Su Yapıları Sempozyumu, Turkey, 19 - 21 November 2015
- XVI. **Köprü Yan Ayaklarının Oluşturduğu Daralmanın Atnalı Vorteks Sistemi ve Oyulmaya Etkisinin DES**

Modellemesi ile İncelenmesi

KÖKEN M.

IMO Su Yapıları Sempozyumu, Turkey, 19 - 21 November 2015

- XVII. **Determination of critical submergence depth at horizontal intakes under asymmetric flow conditions**
GÖĞÜŞ M., KÖKEN M., CİHAN Z., HASPOLAT E.
36. IAHR Word Congress, 28 June - 03 July 2015
- XVIII. **Temporal variation of scouring topography around dual bridge piers**
Selamoglu M., YANMAZ A. M. , KÖKEN M.
7th International Conference on Scour and Erosion, ICSE 2014, Perth, Australia, 2 - 04 December 2014, pp.495-500
- XIX. **Flow structure and large scale turbulence in an open channel bend of strong curvature with flat and deformed bed**
Constantinescu G., KÖKEN M.
7th International Conference on Fluvial Hydraulics (River Flow), Lausanne, Switzerland, 3 - 05 September 2014, pp.1081-1088
- XX. **Application of collars as scour countermeasure at various contraction ratios caused by two spill through abutments**
KÖKEN M., GÖĞÜŞ M., YILMAZ K.
7th International Conference on Fluvial Hydraulics (River Flow), Lausanne, Switzerland, 3 - 05 September 2014, pp.2053-2058
- XXI. **Temporal Variation of Scour Hole around Spill Through Bridge Abutments at Various Contraction Ratios**
Yildiz B., KÖKEN M., GÖĞÜŞ M.
35th World Congress of the International-Association-for-Hydro-Environment-Engineering-and-Research (IAHR), Chengdu, China, 8 - 13 September 2013, pp.3966-3975
- XXII. **A DES Study for the Role of Contraction Ratio on the Coherent Structures Caused by Two Spill Through Abutments**
Koken M.
35th World Congress of the International-Association-for-Hydro-Environment-Engineering-and-Research (IAHR), Chengdu, China, 8 - 13 September 2013, pp.4504-4510
- XXIII. **Experimental Investigation of Flow Conditions over Cambasi Dam Spillway**
ALTAN SAKARYA A. B. , AYDIN İ., GÖĞÜŞ M., KÖKEN M.
35th World Congress of the International-Association-for-Hydro-Environment-Engineering-and-Research (IAHR), Chengdu, China, 8 - 13 September 2013, pp.5748-5755
- XXIV. **Experimental and Computational Investigation of Vortex Formation in a Vertical Intake Structure**
AYDIN İ., KÖKEN M., Aybar A.
35th World Congress of the International-Association-for-Hydro-Environment-Engineering-and-Research (IAHR), Chengdu, China, 8 - 13 September 2013, pp.1084-1092
- XXV. **Effect of Reynolds number and abutment geometry on the flow and turbulence structure around an abutment with a large scour hole**
Koken M., Constantinescu G.
34th IAHR Congress 2011 - Balance and Uncertainty: Water in a Changing World, Incorporating the 33rd Hydrology and Water Resources Symposium and the 10th Conference on Hydraulics in Water Engineering, Brisbane, Australia, 26 June - 01 July 2011, pp.4151-4158
- XXVI. **Time evolution of the horseshoe vortex system forming around a bridge abutment**
KÖKEN M., Gogus M.
5th International Conference on Scour and Erosion, San Francisco, CA, United States Of America, 7 - 10 November 2010, pp.668-677
- XXVII. **A Large Eddy Simulation study of the bed shear stress distributions around isolated and multiple groynes**
Constantinescu G., Koken M., McCoy A.

5th IAHR-Symposium on River, Coastal and Estuarine Morphodynamics, RCEM 2007, Enschede, Netherlands, 17 - 21 September 2007, vol.2, pp.1233-1240

XXVIII. **Investigation of flow around a bridge abutment in a flat bed channel using Large Eddy Simulation**
Koken M., Constantinescu G.

World Environmental and Water Resources Congress 2006: Examining the Confluence of Environmental and Water Concerns, Omaha, NE, United States Of America, 21 - 25 May 2006

XXIX. **Use of a 3D RANS model to predict stratification effects related to fish passage at hydropower dams**
Manjurul Haque M., Koken M., Constantinescu G., Weber L.

31st IAHR Congress 2005: Water Engineering for the Future, Choices and Challenges, Seoul, South Korea, 11 - 16 September 2005, pp.2464-2476

Supported Projects

Köken M., Bombar G., Elçi Ş., TUBITAK Project, AKARSU YATAĞININ ŞEVLİ KISIMLARINDA İNŞAA EDİLEN KÖPRÜ AYAKLARI ETRAFINDAKİ AKIM ŞARTLARININ OYULMA DERİNLİKLERİNİN ARAŞTIRILMASI, 2017 - 2020

Arıcı Y., Köken M., TUBITAK Project, Uygulamalı Eleman Metodu ile Barajların Göçme Davranışının İncelenmesi, 2017 - 2020

KÖKEN M., AYDIN İ., Project Supported by Other Private Institutions, Sema HES iletim kanalı köprü ayakları için su yüzü kabarma analizi, 2017 - 2017

KÖKEN M., AYDIN İ., Project Supported by Other Private Institutions, Hydraulic analysis of critical submergence in pump intake pool of cooling water system in Mary 3 Project in Türkmenistan, 2016 - 2017

KÖKEN M., AYDIN İ., Project Supported by Other Private Institutions, Aşağı Kaleköy Dam Hydraulic and Numerical Model Studies, 2016 - 2017

KÖKEN M., GÖĞÜŞ M., TUBITAK Project, Tirol tipi su alma yapılarında iletim hattına en az katı madde yönlendirecek düzenlemelerin araştırılması, 2015 - 2017

KÖKEN M., Project Supported by Higher Education Institutions, HİDROMEKANİK LABORATUVARI ÇOK AMAÇLI KURPLU KANAL İNŞASI VE ÖN DENEYLER 1. KISIM, 2016 - 2016

KÖKEN M., TUBITAK Project, Tekil ve Çoklu Yatay Su Alma Yapısı Bulunan Hidroelektrik Santrallerde Girdap Oluşumu ve Önlenmesi için Gerekli Düzeneklerin Belirlenmesi, 2013 - 2015

KÖKEN M., Project Supported by Higher Education Institutions, Hidrolik Kapaklardaki Hidrodinamik Yüklerin Hesplamalı Akiskanlar Mekanigi Kullanılarak Belirlenmesi, 2013 - 2014

KÖKEN M., GÖĞÜŞ M., TUBITAK Project, Su alma yapılarında girdap oluşumu ve önlenmesi için gerekli düzeneklerin belirlenmesi, 2011 - 2013

KÖKEN M., Project Supported by Higher Education Institutions, Yatay Plakalı Köprü Yan Ayaklarında Taban Oyulmasının Deneysel Olarak İncelenmesi, 2009 - 2010

Scientific Refereeing

WATER RESOURCES RESEARCH, SCI Journal, May 2021

JOURNAL OF GEOPHYSICAL RESEARCH-ATMOSPHERES, SCI Journal, May 2021

JOURNAL OF IRRIGATION AND DRAINAGE ENGINEERING-ASCE, SCI Journal, April 2021

JOURNAL OF HYDRAULIC ENGINEERING-ASCE, SCI Journal, April 2021

WATER RESOURCES RESEARCH, SCI Journal, March 2021

JOURNAL OF IRRIGATION AND DRAINAGE ENGINEERING-ASCE, SCI Journal, January 2021

WATER RESOURCES RESEARCH, SCI Journal, December 2020

Journal of Ecohydraulics, Other Indexed Journal, December 2020

WATER RESOURCES RESEARCH, SCI Journal, December 2020

ENVIRONMENTAL FLUID MECHANICS, SCI Journal, November 2020

JOURNAL OF HYDRAULIC ENGINEERING-ASCE, SCI Journal, November 2020

TEKNIK DERGI, SCI Journal, October 2020
TEKNIK DERGI, SCI Journal, October 2020
JOURNAL OF HYDRAULIC RESEARCH, SCI Journal, September 2020
JOURNAL OF HYDRAULIC ENGINEERING-ASCE, National Scientific Refreed Journal, September 2020
Journal of Ecohydraulics, Other Indexed Journal, September 2020
JOURNAL OF HYDRAULIC ENGINEERING-ASCE, SCI Journal, August 2020
Teknik Dergi, SCI Journal, July 2020
TEKNIK DERGI, SCI Journal, July 2020
JOURNAL OF HYDRAULIC ENGINEERING-ASCE, National Scientific Refreed Journal, July 2020
JOURNAL OF HYDRAULIC ENGINEERING-ASCE, SCI Journal, May 2020
JOURNAL OF HYDRAULIC ENGINEERING-ASCE, SCI Journal, April 2020
JOURNAL OF HYDRAULIC RESEARCH, SCI Journal, February 2020
JOURNAL OF HYDRAULIC ENGINEERING-ASCE, SCI Journal, February 2020
JOURNAL OF HYDRAULIC ENGINEERING-ASCE, SCI Journal, February 2020
JOURNAL OF HYDRAULIC ENGINEERING-ASCE, SCI Journal, January 2020
GEOPHYSICAL RESEARCH LETTERS, SCI Journal, December 2019
GEOPHYSICAL RESEARCH LETTERS, SCI Journal, October 2019
JOURNAL OF HYDRAULIC RESEARCH, SCI Journal, October 2019
JOURNAL OF HYDRAULIC ENGINEERING-ASCE, SCI Journal, August 2019
GEOPHYSICAL RESEARCH LETTERS, SCI Journal, August 2019
JOURNAL OF HYDRAULIC ENGINEERING-ASCE, SCI Journal, June 2019
JOURNAL OF HYDRAULIC RESEARCH, SCI Journal, June 2019
GEOPHYSICAL RESEARCH LETTERS, SCI Journal, June 2019
JOURNAL OF HYDRAULIC ENGINEERING-ASCE, SCI Journal, April 2019
JOURNAL OF HYDRAULIC ENGINEERING-ASCE, SCI Journal, October 2018
JOURNAL OF HYDRAULIC RESEARCH, SCI Journal, July 2018
Journal Of Hydraulic Engineering-Asce, SCI Journal, April 2018
JOURNAL OF HYDRAULIC RESEARCH, SCI Journal, January 2018

Citations

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