

Asst. Prof. MUSTAFA PERÇİN

Personal Information

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Education Information

Doctorate, Technische Universiteit Delft, Aerospace Engineering Faculty, Netherlands 2010 - 2015

Postgraduate, İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Uçak-Uzay Mühendisliği (YI), Turkey 2007 - 2009

Undergraduate, İstanbul Teknik Üniversitesi, Uçak Ve Uzay Bilimleri Fakültesi, Uçak Mühendisliği Bölümü, Turkey 2002 - 2007

Dissertations

Doctorate, Aerodynamic Mechanisms of Flapping Flight, Technische Universiteit Delft, Aerospace Engineering Faculty, 2009

Postgraduate, Flow around a plunging airfoil in a uniform flow, İstanbul Teknik Üniversitesi, Uçak-Uzay Mühendisliği (YI), 2009

Research Areas

Mechanical Engineering, Energy, Fluid Mechanics, Aeronautical and Space Engineering, Aeronautical Engineering , Testing Techniques, Engineering and Technology

Academic Titles / Tasks

Assistant Professor, Middle East Technical University, Faculty Of Engineering, Department Of Aerospace Engineering, 2018 - Continues

Assistant Professor, Middle East Technical University, Faculty Of Engineering, Department Of Aerospace Engineering, 2017 - 2018

Research Assistant, Technische Universiteit Delft, Faculty Of Aerospace Engineering, 2010 - 2017

Academic and Administrative Experience

Deputy Head of Department, Middle East Technical University, Faculty of Engineering, Department of Aerospace Engineering, 2018 - 2019

Erasmus Coordinator, Middle East Technical University, Faculty of Engineering, Department of Aerospace Engineering, 2017 - 2018

Courses

AERODYNAMICS II, Undergraduate, 2018 - 2019
UNSTEADY AERODYNAMICS, Postgraduate, 2019 - 2020

Advising Theses

Perçin M., Experimental and numerical investigation of a jet vane of thrust vector control system, Postgraduate, B.SÖĞÜTCÜ(Student), 2019

Perçin M., UPGRADE AND CHARACTERIZATION OF THE TUBITAK-SAGE EXPANSION TUBE, Postgraduate, M.AKSAY(Student), 2019

Perçin M., Aeroelastic analyses and tests of a wing like structure with payload, Postgraduate, Ö.SERİN(Student), 2019

Perçin M., A COMPUTATIONAL ANALYSIS ON ROTOR-PROPELLER ARM INTERACTION IN HOVERING FLIGHT, Postgraduate, S.YENER(Student), 2019

Perçin M., Flow characteristics of translating flexible wings at low Reynolds numbers, Postgraduate, M.YAZDANPANA(H(Student), 2019

Uzol O., Perçin M., Experimental investigation of the helicopter blade tip shape effects on aerodynamic performance and tip vortex characteristics, Postgraduate, S.ULUOCAK(Student), 2019

Designed Lessons

Perçin M., Unsteady Aerodynamics, Postgraduate, 2019 - 2020

Taught Courses And Trainings

Uzol O., Kayran A., Sezer Uzol N., Çöker D., Huvaj Sarıhan N., Oğuz E., Keysan O., Perçin M., Rüzgar Enerjisi ve Rüzgar Türbini Teknolojileri Temel Eğitimi, 2019 - 2019

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

- I. **Experimental investigation of tip anhedral effects on the aerodynamics of a model helicopter rotor in hover**
Uluocak S., PERÇİN M., UZOL O.
Aerospace Science and Technology, vol.113, 2021 (Journal Indexed in SCI)
- II. **Effects of inflow boundary layer on the wake of a radially non-uniform porous disk**
Abdulrahim A., Akpolat M. T. , Hassanein A., PERÇİN M., UZOL O.
Journal of Renewable and Sustainable Energy, vol.13, no.3, 2021 (Journal Indexed in SCI)
- III. **Asymmetric vortex shedding in the wake of an abruptly expanding annular jet**
Vanierschot M., PERÇİN M., van Oudheusden B. W.
Experiments in Fluids, vol.62, no.4, 2021 (Journal Indexed in SCI)
- IV. **Single- and double-helix vortex breakdown as two dominant global modes in turbulent swirling jet flow**
Vanierschot M., Mueller J. S. , Sieber M., PERÇİN M., van Oudheusden B. W. , Oberleithner K.
JOURNAL OF FLUID MECHANICS, vol.883, 2020 (Journal Indexed in SCI)
- V. **Accurate position control of a flapping-wing robot enabling free-flight flow visualisation in a wind tunnel**
Karasek M., PERÇİN M., Cunis T., van Oudheusden B. W. , De Wagter C., Remes B. D. W. , de Croon G. C. H. E.
INTERNATIONAL JOURNAL OF MICRO AIR VEHICLES, vol.11, 2019 (Journal Indexed in SCI)
- VI. **Round-robin tests of porous disc models**
Aubrun S., Bastankhah M., Cal R., Conan B., Hearst R., Hoek D., Hölling M., Huang M., Hur C., Karlsen B., et al.

Journal of Physics: Conference Series, vol.1256, no.1, 2019 (Journal Indexed in SCI)

- VII. **Three-dimensional flow and load characteristics of flexible revolving wings**
van de Meerendonk R., PERÇİN M., van Oudheusden B. W.
EXPERIMENTS IN FLUIDS, vol.59, no.10, 2018 (Journal Indexed in SCI)
- VIII. **Numerical Simulation of a Flapping Micro Aerial Vehicle Through Wing Deformation Capture**
Tay W. B. , de Baar J. H. S. , PERÇİN M., Deng S., van Oudheusden B. W.
AIAA JOURNAL, vol.56, no.8, pp.3257-3270, 2018 (Journal Indexed in SCI)
- IX. **Double helix vortex breakdown in a turbulent swirling annular jet flow**
Vanierschot M., Percin M., van Oudheusden B. W.
PHYSICAL REVIEW FLUIDS, vol.3, no.3, 2018 (Journal Indexed in SCI)
- X. **Analysis of the pressure fields in a swirling annular jet flow**
Percin M., Vanierschot M., van Oudheusden B. W.
EXPERIMENTS IN FLUIDS, vol.58, no.12, 2017 (Journal Indexed in SCI)
- XI. **Numerical Simulation of a Flexible X-Wing Flapping-Wing Micro Air Vehicle**
Deng S., Percin M., van Oudheusden B. W. , Bijl H., Remes B., Xiao T.
AIAA JOURNAL, vol.55, no.7, pp.2295-2306, 2017 (Journal Indexed in SCI)
- XII. **Flow Structures Around a Flapping-Wing Micro Air Vehicle Performing a Clap-and-Peel Motion**
Percin M., van Oudheusden B., Remes B.
AIAA JOURNAL, vol.55, no.4, pp.1251-1264, 2017 (Journal Indexed in SCI)
- XIII. **Deconvolution Kalman filtering for force measurements of revolving wings**
Vester R., Percin M., van Oudheusden B.
MEASUREMENT SCIENCE AND TECHNOLOGY, vol.27, no.9, 2016 (Journal Indexed in SCI)
- XIV. **Force generation and wing deformation characteristics of a flapping-wing micro air vehicle 'DeIFly II' in hovering flight**
Percin M., van Oudheusden B. W. , de Croon G. C. H. E. , Remes B.
BIOINSPIRATION & BIOMIMETICS, vol.11, no.3, 2016 (Journal Indexed in SCI)
- XV. **Experimental Investigation of Aerodynamics of Flapping-Wing Micro-Air-Vehicle by Force and Flow-Field Measurements**
Deng S., Percin M., van Oudheusden B.
AIAA JOURNAL, vol.54, no.2, pp.588-602, 2016 (Journal Indexed in SCI)
- XVI. **Error analysis and assessment of unsteady forces acting on a flapping wing micro air vehicle: free flight versus wind-tunnel experimental methods**
Caetano J. V. , Percin M., van Oudheusden B. W. , Remes B., de Wagter C., de Croon G. C. H. E. , de Visser C. C.
BIOINSPIRATION & BIOMIMETICS, vol.10, no.5, 2015 (Journal Indexed in SCI)
- XVII. **Three-dimensional flow structures and unsteady forces on pitching and surging revolving flat plates**
Percin M., Van Oudheusden B. W.
EXPERIMENTS IN FLUIDS, vol.56, 2015 (Journal Indexed in SCI)
- XVIII. **Three-dimensional vortex wake structure of a flapping-wing micro aerial vehicle in forward flight configuration**
Percin M., van Oudheusden B. W. , Eisma H. E. , Remes B. D. W.
EXPERIMENTS IN FLUIDS, vol.55, no.9, 2014 (Journal Indexed in SCI)
- XIX. **Experimental Investigation on the Aerodynamics of a Bio-inspired Flexible Flapping Wing Micro Air Vehicle**
Deng S., Percin M., van Oudheusden B., Remes B., Bijl H.
INTERNATIONAL JOURNAL OF MICRO AIR VEHICLES, vol.6, no.2, pp.105-115, 2014 (Journal Indexed in SCI)
- XX. **Kriging regression of PIV data using a local error estimate**
de Baar J. H. S. , Percin M., Dwight R. P. , van Oudheusden B. W. , Bijl H.
EXPERIMENTS IN FLUIDS, vol.55, no.1, 2014 (Journal Indexed in SCI)
- XXI. **Wing Flexibility Effects in Clap-and-Fling**
Percin M., Hu Y., van Oudheusden B. W. , Remes B., Scarano F.
INTERNATIONAL JOURNAL OF MICRO AIR VEHICLES, vol.3, no.4, pp.217-227, 2011 (Journal Indexed in SCI)

Articles Published in Other Journals

- I. **Numerical Investigation of Propeller-FrameArm Interaction in Hovering Flight**
Yener S., PERÇİN M.
Havacılık ve Uzay Teknolojileri Dergisi, vol.13, no.2, 2020 (Refereed Journals of Other Institutions)
- II. **Flow Visualization around a Flapping-Wing Micro Air Vehicle in Free Flight Using Large-Scale PIV**
Herrero A. d. E. , PERÇİN M., Karasek M., van Oudheusden B.
AEROSPACE, vol.5, no.4, 2018 (Journal Indexed in ESCI)

Books & Book Chapters

- I. **The DelFly: Design, Aerodynamics, and Artificial intelligence of a Flapping Wing Robot**
de Croon G. C. H. E. , PERÇİN M., Remes B. D. W. , Ruijsink R., de Wagter C.
Springer, 2015

Refereed Congress / Symposium Publications in Proceedings

- I. **Flow field characteristics of translating and revolving flexible wings**
Yazdanpanah M., Hazaveh H. A. , PERÇİN M., van de Meerendonk R., van Oudheusden B. W.
10th Ankara International Aerospace Conference (AIAC 2019), Ankara, Turkey, 18 - 20 October 2019
- II. **A Computational Study on Rotor-Propeller Arm Interaction in Hovering Flight**
Yener S., PERÇİN M.
10th Ankara International Aerospace Conference (AIAC 2019), Ankara, Turkey, 18 - 20 October 2019
- III. **Flow Field Characteristics of Translating and Revolving Flexible Wings**
PERÇİN M., Yazdanpanah M., Amiri H., van de Meerendonk R., van Oudheusden B. W.
13th International Symposium on Particle Image Velocimetry, Munich, Germany, 22 - 24 July 2019
- IV. **Round-robin tests of porous disc models**
Aubrun S., Bastankhah M., Cal R., Conan B., Hearst R., Hoek D., Hölling M., Huang M., Hur C., Karlsen B., et al.
Wake Conference 2019, Visby, Sweden, 22 - 24 May 2019, vol.1256
- V. **Comparison of Wake Models with Porous Disc Wake Profile Measurements**
Hazaveh H. A. , Bay A., Aysan M. S. , Yanik T., Yazdanpanah M., Yiğili İ., Yağmur A. S. , Perçin M., Uzol O.
Wind Energy Science Conference (WESC), Cork, Ireland, 17 - 20 June 2019
- VI. **Flow visualization around a flapping-wing micro air vehicle in free flight**
Del Estal Herrero A., Perçin M., Karasek M., Van Oudheusden B. W.
18th International Symposium on Flow Visualization, Zürich, Switzerland, 26 - 29 June 2018
- VII. **Helikopter Pal Ucu Şekillerinin Aerodinamik Performansa ve Uç Girdabına Etkisinin Deneysel Olarak İncelenmesi**
Uluocak S., Hazaveh H. A. , Perçin M., Akpolat M. T. , Uzol O.
7. Ulusal Havacılık ve Uzay Konferansı, Samsun, Turkey, 12 - 14 September 2018
- VIII. **Ejektör Sisteminde Kullanılan Loplu Lüle Geometrisinin “k- ω SST” Türbülans Modeli İle Çözümünün Doğrulanması Ve Lop Sayısının Performans Etkilerinin İncelenmesi**
Bayat A., Perçin M.
7. Ulusal Havacılık ve Uzay Konferansı, Samsun, Turkey, 12 - 14 September 2018
- IX. **Jet Kanadı Kullanılan İtki Vektör Sisteminin Sayısal ve Deneysel Analizi**
Söğütçü B., Perçin M., Karaca M.
7. Ulusal Havacılık ve Uzay Konferansı, Samsun, Turkey, 12 - 14 September 2018
- X. **Experimental investigation of the effects of helicopter rotor tip geometries on aerodynamic performance and tip vortex characteristics**
Uluocak S., Hazaveh H. A. , PERÇİN M., Akpolat M. T. , UZOL O.

44th European Rotorcraft Forum, 18 - 21 September 2018

- XI. **Determination of pressure and load characteristics for flexible revolving wings by means of tomographic PIV**
van de Meerendonk R., PERÇİN M., van Oudheusden B. W.
International Workshop on Non-Intrusive Optical Flow Diagnostics, Delft, Netherlands, 25 - 26 October 2016
- XII. **Force measurement and load estimation studies at ITU for flexible flapping wings and maneuvering wings under gust**
Son O., Zaloglu B., PERÇİN M., ÇETİNER YILDIRIM N. L. O.
International Workshop on Non-Intrusive Optical Flow Diagnostics, Delft, Netherlands, 25 - 26 October 2016
- XIII. **A novel phase-averaging method based on vortical structure correlation**
Vanierschot M., PERÇİN M., van Oudheusden B. W.
International Workshop on Non-Intrusive Optical Flow Diagnostics, Delft, Netherlands, 25 - 26 October 2016
- XIV. **Unsteady flow through a sharp-edged single-hole orifice placed in a pipe**
Anantharaman V., Waterson N., Nakiboglu G., PERÇİN M., van Oudheusden B. W.
International Workshop on Non-Intrusive Optical Flow Diagnostics, Delft, Netherlands, 25 - 26 October 2016
- XV. **Experimental investigation of turbulent flow through single-hole orifice placed in a pipe by means of time-resolved particle image velocimetry and unsteady pressure measurements**
Anantharaman V., Waterson N., Nakiboglu G., PERÇİN M., van Oudheusden B. W.
11th International Conference on Flow-Induced Vibrations, The Hague, Netherlands, 4 - 06 July 2016
- XVI. **Three-dimensional flow and load characteristics of flexible revolving wings at low Reynolds number**
van de Meerendonk R., PERÇİN M., van Oudheusden B. W.
18th International Symposium on Applications of Laser Techniques to Fluid Mechanics, Lisbon, Portugal, 4 - 07 July 2016
- XVII. **Visualization of the structure of vortex breakdown in free swirling jet flow**
Vanierschot M., PERÇİN M., van Oudheusden B. W.
18th International Symposium on Applications of Laser Techniques to Fluid Mechanics, Lisboa, Portugal, 4 - 07 July 2016
- XVIII. **Numerical simulation of a flapping wing MAV based on wing deformation capture analysis**
Tay W. B. , de Baar J. H. S. , PERÇİN M., Deng S., van Oudheusden B. W.
34th AIAA Applied Aerodynamics Conference, Washington, Kiribati, 13 - 17 June 2016
- XIX. **Leading Edge Vortex Evolution and Lift Production on Rotating Wings (Invited)**
Jones A. R. , Manar F., Phillips N., Nakata T., Bomphrey R. J. , Ringuette M., PERÇİN M., van Oudheusden B. W. , Palmer J. L.
54th AIAA Aerospace Sciences Meeting, San Diego, California, USA, 4 - 08 January 2016
- XX. **Experimental investigation of three-dimensional flow structures in annular swirling jets**
PERÇİN M., Vanierschot M., van Oudheusden B. W.
Workshop on Non-Intrusive Measurements for Unsteady Flows and Aerodynamics (NIM2015), Poitiers, France, 27 - 29 October 2015
- XXI. **Force generation and wing deformation characteristics of the 'DeFly II' MAV in hovering flight conditions**
PERÇİN M., van Oudheusden B. W. , Remes B.
International Micro Air Vehicles Conference and Flight Competition, Aachen, Germany, 15 - 18 September 2015
- XXII. **Flow Visualization and Force Measurements on Accelerated Revolving Flat Plates at Low Reynolds Numbers**
PERÇİN M., van Oudheusden B. W.
45th AIAA Fluid Dynamics Conference, Dallas, TX, 22 - 26 June 2015
- XXIII. **Numerical simulation of an X-wing flapping wing MAV by means of a deforming overset grid method**
Deng S., PERÇİN M., van Oudheusden B. W. , Bijl H., Remes B., Xiao T.
22nd AIAA Computational Fluid Dynamics Conference, Dallas, TX, 22 - 26 June 2015
- XXIV. **Aerodynamic characterization of 'DeFly Micro' in forward flight configuration by force measurements and flow field visualization**

Deng S., Percin M., van Oudheusden B.

Asia-Pacific International Symposium on Aerospace Technology (APISAT), Shanghai, China, 24 - 26 September 2014, vol.99, pp.925-929

- XXV. **Three-dimensional flow fields and forces on revolving flat plates**
PERÇİN M., van Oudheusden B. W.
67th Annual Meeting of the APS Division of Fluid Dynamics, San-Francisco, Costa Rica, 23 - 25 November 2014
- XXVI. **Vortex Formation and Force Generation Mechanisms of the DelFly II in Hovering Flight**
Tenaglia A., PERÇİN M., van Oudheusden B. W. , Deng S., Remes B.
International Micro Air Vehicle Conference and Flight Competition (IMAV2014), Delft, Netherlands, 12 - 15 August 2014
- XXVII. **Flow around a suddenly accelerated rotating plate at low Reynoldsnumber**
PERÇİN M., Ziegler L., van Oudheusden B. W.
17th International Symposium on Applications of Laser Techniques to Fluid Mechanics, Lisbon, Portugal, 7 - 10 July 2014
- XXVIII. **Force and flowfield measurements of a bio-inspired flapping MAV 'Delfly Micro'**
Deng S., PERÇİN M., van Oudheusden B. W. , Remes B., Tenaglia A.
32nd AIAA Applied Aerodynamics Conference, Atlanta, GA, 16 - 20 June 2014
- XXIX. **Tethered vs. Free Flight Force Determination of the DelFly II Flapping Wing Micro Air Vehicle**
Caetano J. V. , Percin M., de Visser C. C. , van Oudheusden B., de Croon G. C. H. E. , de Wagter C., Remes B., Mulder M.
International Conference on Unmanned Aircraft Systems (ICUAS), Florida, United States Of America, 27 - 30 May 2014, pp.942-948
- XXX. **Experimental investigation of the flapping performance on 'DelFly Micro'**
Deng S., van Oudheusden B. W. , Remes B., PERÇİN M., Bijl H., Ruijsink R.
International Micro Air Vehicle Conference and Flight Competition (IMAV2013), Toulouse, France, 17 - 20 September 2013
- XXXI. **Three-dimensional wake reconstruction of a flapping-wing MAV using a Kriging regression technique**
PERÇİN M., de Baar J. H. S. , van Oudheusden B. W. , Dwight R. P.
10th International Symposium on Particle Image Velocimetry (PIV13), Delft, Netherlands, 1 - 03 July 2013
- XXXII. **Numerical and experimental analysis of tandem flapping flight**
Tay W. B. , PERÇİN M., van Oudheusden B. W. , Bijl H., ÇETİNER YILDIRIM N. L. O. , ÜNAL M. F.
43rd Fluid Dynamics Conference, San Diego, CA, 24 - 27 June 2013
- XXXIII. **Overview of activities in stochastic data assimilation for applications in aerodynamics**
Dwight R. P. , de Baar J. H. S. , Sciacchitano A., PERÇİN M., Bijl H., Scarano F.
5th Symposium on Integrating CFD and Experiments in Aerodynamics (Integration 2012), Tokyo, Japan, 3 - 05 October 2012
- XXXIV. **Flow Visualization in the Wake of the Flapping-Wing MAV 'DelFly II' in Forward Flight**
PERÇİN M., Eisma H. E. , van Oudheusden B. W. , Remes B., Ruijsink R., de Wagter C.
30th AIAA Applied Aerodynamics Conference, New Orleans, Louisiana, 25 - 28 June 2012
- XXXV. **Wake reconstruction of flapping-wing MAV DelFly II in forward flight**
PERÇİN M., Eisma H. E. , de Baar J. H. S. , van Oudheusden B. W. , Remes B., Ruijsink R., de Wagter C.
International Micro Air Vehicle Conference and Flight Competition (IMAV2012), Braunschweig, Germany, 3 - 06 June 2012
- XXXVI. **Wing flexibility effects in clap-and-fling**
PERÇİN M., Hu Y., van Oudheusden B. W. , Scarano F.
International Micro Air Vehicle Conference and Flight Competition, Nunspeet, Netherlands, 12 - 15 September 2011
- XXXVII. **Flow Around and Forces Acting on a Plunging Airfoil in a Uniform Flow**
PERÇİN M., MISIRLIOĞLU A., ÜNAL M. F.
International Congress on Vortex Flow and Vortex Methods, Caserta, Italy, 7 - 10 November 2010
- XXXVIII. **Flow around a plunging airfoil in a uniform flow**
PERÇİN M., MISIRLIOĞLU A., ÜNAL M. F.

5th Ankara International Aerospace Conference (AIAC), Ankara, Turkey, 17 - 19 August 2009

XXXIX. **Effect of transpassing jet flow with spanwise periodicity on the near-wake of cylinders**

PERÇİN M., Aydın B. T. , ÇETİNER YILDIRIM N. L. O. , ÜNAL M. F.

4th Ankara International Aerospace Conference (AIAC), Ankara, Turkey, 10 - 12 September 2007

XL. **Control of self-induced pitching vibrations of of an airfoil: downstream cylinder**

PERÇİN M., Tinar E., ÇETİNER YILDIRIM N. L. O. , ÜNAL M. F.

12th International Symposium on Flow Visualization, Göttingen, Germany, 10 - 14 September 2006

Scientific Consultations

Turkish Aerospace, Scientific Consultancy, Middle East Technical University, Faculty of Engineering, Department of Aerospace Engineering, Turkey, 2019 - 2020

Tasks In Event Organizations

Tuncer İ. H. , Yaman Y., Kayran A., Uzol O., Gürses E., Perçin M., 10th Ankara International Aerospace Conference (AIAC2019), Scientific Congress, Ankara, Turkey, Eylül 2019

Tekinalp O., Perçin M., Kutay A. T. , METU VTOL Aircraft Competition 2, Social Activities, Ankara, Turkey, Ekim 2018

Citations

Total Citations (WOS):229

h-index (WOS):10