Prof. HALDUN SÜRAL

Personal Information

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International Researcher IDs
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ScopusID: 14421681700
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Biography

Haldun Süral is a faculty member at the IE Department of METU, Ankara, Turkey. He received his BS, MS, and PhD all from METU.
His work experience includes teaching and research positions at METU, INSEAD (Fontainebleau, France), and UW and *WLU*
(Waterloo, Canada). He is area editor of production planning and scheduling at INFOR: Information Systems and Operational Research,
he is member of the past advisory board of OR Spectrum and he served at the editorial board of Turkish Journal of Industrial
Engineering. He is past president of the OR Society of Turkey.

His applied research works range from beer forecasting and supply network design to restructuring a large
humanitarian aid organization and waste management system design. Areas are Methodology, Modeling, and
Applications in Operations Research; Production Planning and Scheduling; Logistics, Location, Distribution, and Routing;
Facility Logistics; History of Operations Research in Turkey.

Education Information

Doctorate, Middle East Technical University, Graduate School of Natural and Applied Sciences, Endüstri Mühendisliği
(Dr), Turkey 1988 - 1996

Research Areas

Engineering and Technology

Academic Titles / Tasks

Professor, Middle East Technical University, Faculty of Engineering, Department of Industrial Engineering, 2014 -
Continues

Academic and Administrative Experience

Erasmus Coordinator, Middle East Technical University, 2018 - Continues

Advising Theses

SÜRAL H., Order picking problem: its variations and integration, Doctorate, S.SAYLAM(Student), 2022

SÜRAL H., The refugee camp framework: Methodology and modeling through systems view, Postgraduate, E.NAZ(Student), 2022

SÜRAL H., Green logistics applications in transportation and warehousing, Doctorate, A.ATASHI(Student), 2021

SÜRAL H., Location–routing and synchronization problems in city logistics, Doctorate, M.Saleh(Student), 2020

SÜRAL H., The cutting stock problem with diameter conversion inthe construction industry, Postgraduate, D.Altınpulluk(Student), 2019

SÜRAL H., Open-loop reverse logistics network design of waste of electric and electronic equipment by consideration of hazardous materials, Postgraduate, T.Mohammadi(Student), 2019

SÜRAL H., ÇELİK M., On the effect of freight villages in Turkey, Postgraduate, A.METE(Student), 2018

SÜRAL H., ÇELİK M., Impact of demand uncertainty on facility layouts: distributed versus dynamic facility layouts, Postgraduate, B.EFEOĞLU(Student), 2016

SÜRAL H., İYİGÜN C., City logistics system design under cost uncertainty, Postgraduate, U.CAN(Student), 2015

SÜRAL H., BAKAL İ. S., The single-item lot sizing problem in SMT production lines, Postgraduate, H.SERİN(Student), 2014

SÜRAL H., GÜREL S., The Air cargo scheduling problem with heterogenous fleet, Postgraduate, Y.Durdak(Student), 2013

SÜRAL H., Rectilinear interdiction problem by locating a line barrier, Postgraduate, H.Gharehmeshk(Student), 2013

KIRCA Ö., SÜRAL H., Multi-layer network design problems in telecommunication, Doctorate, İ.YÜKSEL(Student), 2013

SÜRAL H., The air cargo shceduling problem with heterogenous fleet, Postgraduate, Y.DURDAK(Student), 2013

İYİGÜN C., SÜRAL H., Generalization of restricted planar location problems: Unified meta-heuristics for single facility case, Postgraduate, M.SALEH(Student), 2013

SÜRAL H., Locations on a line and generalization to the dynamic p-medians, Doctorate, H.GÜDEN(Student), 2012

GÜREL S., SÜRAL H., Heat exchanger network synthesis with detailed design: Reformulation as a shortest path problem by temperature discretization, Postgraduate, I.KİRKİZOĞLU(Student), 2012

SÜRAL H., The order-picking problem in parallel-aisle warehouses, Postgraduate, M.ÇELİK(Student), 2009

SÜRAL H., The campaign routing problem, Postgraduate, E.ÖZDEMİR(Student), 2009

SÜRAL H., Approximate models and solution approaches for the vehicle routing problem with multiple use of vehicles and time windows, Postgraduate, J.WOUTER(Student), 2008

SÜRAL H., The multiple retailer inventory routing problem with backorders, Postgraduate, O.ALİŞAN(Student), 2008

SÜRAL H., One-warehouse multi-retailer problem under inventory control and transportation policies, Doctorate, O.SOLYALI(Student), 2008

KARASAKAL E., SÜRAL H., A genetic algorithm for the biobjective traveling salesman problem with profits, Postgraduate, S.KARADEMİR(Student), 2008

KARASAKAL E., SÜRAL H., The biobjective traveling salesman problem with profit, Postgraduate, Ö.ŞİMŞEK(Student), 2007

ÖZDEMİREL N. E., SÜRAL H., A genetic algorithm for TSP with backhauls based on conventional heuristics, Postgraduate, İ.ÖNDER(Student), 2007

SÜRAL H., Modeling and analysis of the facility layout problem, Postgraduate, Z.KİRKİZOĞLU(Student), 2006

SÜRAL H., Offline and online disk scheduling problems, Postgraduate, N.EVREN(Student), 2006

SÜRAL H., The inventory routing problem with deterministic order-up-to level inventory policies, Postgraduate, Ö.PINAR(Student), 2005

SÜRAL H., The general lot sizing and scheduling problem with sequence dependent changeovers, Postgraduate, A.Koçlar(Student), 2005

SÜRAL H., The general lot sizing and scheduling problem with sequence dependet changeovers, Postgraduate, A.KOÇLAR(Student), 2005

SÜRAL H., Analysis of an inventory system with advance demand information and spply uncertainty, Postgraduate, E.ARIKAN(Student), 2005

SÜRAL H., Analysis of an inventory system with advance emand information and supply uncertainty, Postgraduate, E.Arıkan(Student), 2005

SÜRAL H., An integrated inventory control and vehicle routing problem, Postgraduate, O.SOLYALI(Student), 2005

SÜRAL H., Analysis of evolutionary algorithms for constrained routing problems /, Postgraduate, E.DEMİR(Student), 2004

AZİZOĞLU M., SÜRAL H., Scheduling with discounted revenues, Postgraduate, A.KICIROĞLU(Student), 2003

SÜRAL H., ÖZDEMİREL N. E., An evolutionary approach to tsp: Crossover with conventional heuristics, Postgraduate, M.Sönmez(Student), 2003

ÖZDEMİREL N. E., SÜRAL H., An evolutionary approach to TSP: Crossover with convertional heuristics, Postgraduate, M.SÖNMEZ(Student), 2003

SÜRAL H., An iterative hub location and routing problem for postal delivery systems, Postgraduate, S.ÇETİNER(Student), 2003

SÜRAL H., Solution approaches for the two-level p-median problem, Postgraduate, G.ŞAHİN(Student), 2002

SÜRAL H., Heuristic algorithms for the routing problems with backhauls, Postgraduate, Ö.DEMİREL(Student), 2001

Published journal articles indexed by SCI, SSCI, and AHCI

I. **Arc routing based compact formulations for picker routing in single and two block parallel aisle warehouses**
Saylam S., Çelik M., SÜRAL H.
European Journal of Operational Research, vol.313, no.1, pp.225-240, 2024 (SCI-Expanded)

II. **Energy minimizing order picker forklift routing problem**
Atashi Khoei A., Süral H., Tural M. K.
European Journal of Operational Research, vol.307, no.2, pp.604-626, 2023 (SCI-Expanded)

III. **The min-max order picking problem in synchronised dynamic zone-picking systems**
Saylam S., Celik M., SÜRAL H.
INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH, vol.61, no.7, pp.2086-2104, 2023 (SCI-Expanded)

IV. **Inventory routing in a warehouse: The storage replenishment routing problem**
Çelik M., Archetti C., SÜRAL H.
European Journal of Operational Research, vol.301, no.3, pp.1117-1132, 2022 (SCI-Expanded)

V. **An Effective Matheuristic for the Multivehicle Inventory Routing Problem**
Solyalı O., SÜRAL H.
Transportation Science, vol.56, no.4, pp.1044-1057, 2022 (SCI-Expanded)

VI. **Multi-facility green Weber problem**
Atashi Khoei A., Süral H., Tural M. K.
Computers and Operations Research, vol.113, 2020 (SCI-Expanded)

VII. **Potential effects of logistics clusters: The case of Turkish Freight Villages**
Baydar A. M., SÜRAL H., Celik M.
JOURNAL OF CLEANER PRODUCTION, vol.233, pp.399-411, 2019 (SCI-Expanded)

VIII. **The dynamic p-median problem with mobile facilities**
Guden H., SÜRAL H.
COMPUTERS & INDUSTRIAL ENGINEERING, vol.135, pp.615-627, 2019 (SCI-Expanded)

IX. **Order picking in parallel-aisle warehouses with multiple blocks: complexity and a graph theory-based heuristic**
ÇELİK M., SÜRAL H.
INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH, vol.57, no.3, pp.888-906, 2019 (SCI-Expanded)

X. **Generalization of the restricted planar location problems: Unified metaheuristic algorithms**
Farham M. S., SÜRAL H., İYİGÜN C.
COMPUTERS & OPERATIONS RESEARCH, vol.99, pp.48-66, 2018 (SCI-Expanded)

XI. **A column generation approach for the location-routing problem with time windows**
Farham M. S., SÜRAL H., İYİGÜN C.
COMPUTERS & OPERATIONS RESEARCH, vol.90, pp.249-263, 2018 (SCI-Expanded)

XII. **A hybrid Benders approach for coordinated capacitated lot-sizing of multiple product families with**

set-up times

Bayley T., SÜRAL H., Bookbinder J. H.

INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH, vol.56, no.3, pp.1326-1344, 2018 (SCI-Expanded)

XIII. **Time-dependent green Weber problem**

Khoei A. A., SÜRAL H., TURAL M. K.

COMPUTERS & OPERATIONS RESEARCH, vol.88, pp.316-323, 2017 (SCI-Expanded)

XIV. **Freight villages: A literature review from the sustainability and societal equity perspective**

Baydar A. M., Sural H., ÇELİK M.

JOURNAL OF CLEANER PRODUCTION, vol.167, pp.1208-1221, 2017 (SCI-Expanded)

XV. **A multi-phase heuristic for the production routing problem**

Solyali O., Süral H.

COMPUTERS & OPERATIONS RESEARCH, vol.87, pp.114-124, 2017 (SCI-Expanded)

XVI. **A polynomial algorithm for the earthwork allocation problem with borrow and waste site selection**

Guden H., SÜRAL H.

JOURNAL OF THE OPERATIONAL RESEARCH SOCIETY, vol.68, no.9, pp.1085-1093, 2017 (SCI-Expanded)

XVII. **Effective network formulations for lot sizing with backlogging in two-level serial supply chains**

Solyali O., Denizel M., SÜRAL H.

IIE TRANSACTIONS, vol.48, no.2, pp.146-157, 2016 (SCI-Expanded)

XVIII. **Order picking in a parallel-aisle warehouse with turn penalties**

ÇELİK M., SÜRAL H.

INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH, vol.54, no.14, pp.4340-4355, 2016 (SCI-Expanded)

XIX. **The Weber problem in congested regions with entry and exit points**

Farham M. S., SÜRAL H., İYİGÜN C.

COMPUTERS & OPERATIONS RESEARCH, vol.62, pp.177-183, 2015 (SCI-Expanded)

XX. **Locating mobile facilities in railway construction management**

Guden H., SÜRAL H.

OMEGA-INTERNATIONAL JOURNAL OF MANAGEMENT SCIENCE, vol.45, pp.71-79, 2014 (SCI-Expanded)

XXI. **Order picking under random and turnover-based storage policies in fishbone aisle warehouses**

Celik M., SÜRAL H.

IIE TRANSACTIONS, vol.46, no.3, pp.283-300, 2014 (SCI-Expanded)

XXII. **The one-warehouse multi-retailer problem: reformulation, classification, and computational results**

Solyali O., SÜRAL H.

ANNALS OF OPERATIONS RESEARCH, vol.196, no.1, pp.517-541, 2012 (SCI-Expanded)

XXIII. **A Branch-and-Cut Algorithm Using a Strong Formulation and an A Priori Tour-Based Heuristic for an Inventory-Routing Problem**

Solyali O., SÜRAL H.

TRANSPORTATION SCIENCE, vol.45, no.3, pp.335-345, 2011 (SCI-Expanded)

XXIV. **Hubbing and routing in postal delivery systems**

Cetiner S., Sepil C., SÜRAL H.

ANNALS OF OPERATIONS RESEARCH, vol.181, no.1, pp.109-124, 2010 (SCI-Expanded)

XXV. **The One-Warehouse Multiretailer Problem with an Order-Up-To Level Inventory Policy**

Solyali O., SÜRAL H., Denizel M.

NAVAL RESEARCH LOGISTICS, vol.57, no.7, pp.653-666, 2010 (SCI-Expanded)

XXVI. **Lagrangean relaxation based heuristics for lot sizing with setup times**

SÜRAL H., Denizel M., Van Wassenhove L. N.

EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol.194, no.1, pp.51-63, 2009 (SCI-Expanded)

XXVII. **Equivalence of the LP relaxations of two strong formulations for the capacitated lot-sizing problem with setup times**

Denizel M., ALTEKİN F. T., SÜRAL H., Stadtler H.

OR SPECTRUM, vol.30, no.4, pp.773-785, 2008 (SCI-Expanded)

XXVIII. **A single supplier-single retailer system with an order-up-to level inventory policy**

Solyali O., SÜRAL H.

OPERATIONS RESEARCH LETTERS, vol.36, no.5, pp.543-546, 2008 (SCI-Expanded)

XXIX. **Comment on Berman and Huang (2004): Minisum collection depots location problem reduces to the p-median problem**

Ozpeynirci O., Sueral H.

JOURNAL OF THE OPERATIONAL RESEARCH SOCIETY, vol.58, no.10, pp.1395-1396, 2007 (SCI-Expanded)

XXX. **A review of hierarchical facility location models**

Sahin G., Sural H.

COMPUTERS & OPERATIONS RESEARCH, vol.34, no.8, pp.2310-2331, 2007 (SCI-Expanded)

XXXI. **Locational analysis for regionalization of Turkish Red Crescent blood services**

Sahin G., Sural H., Meral S.

COMPUTERS & OPERATIONS RESEARCH, vol.34, no.3, pp.692-704, 2007 (SCI-Expanded)

XXXII. **On alternative mixed integer programming formulations and LP-based heuristics for lot-sizing with setup times**

Denizel M., Sural H.

JOURNAL OF THE OPERATIONAL RESEARCH SOCIETY, vol.57, no.4, pp.389-399, 2006 (SCI-Expanded)

XXXIII. **A knapsack model for bandwidth management of prerecorded multiple MPEG video sources**

Erten Y., Gullu R., Sural H.

TELECOMMUNICATION SYSTEMS, vol.28, no.1, pp.101-116, 2005 (SCI-Expanded)

XXXIV. **A note on ''The general lot sizing and scheduling problem''**

Koclar A., Sural H.

OR SPECTRUM, vol.27, no.1, pp.145-146, 2005 (SCI-Expanded)

XXXV. **The single-vehicle routing problem with unrestricted backhauls**

Sural H., Bookbinder J.

NETWORKS, vol.41, no.3, pp.127-136, 2003 (SCI-Expanded)

XXXVI. **Multidimensional assortment problem with an application**

Tripathy A., Sural H., Gerchak Y.

NETWORKS, vol.33, no.3, pp.239-245, 1999 (SCI-Expanded)

XXXVII. **Efes Beverage Group makes location and distribution decisions for its malt plants**

Koksalan M., Sural H.

INTERFACES, vol.29, no.2, pp.89-103, 1999 (SCI-Expanded)

XXXVIII. **A location-distribution application for a beer company**

Köksalan M., SÜRAL H., KIRCA Ö.

European Journal of Operational Research, vol.80, no.1, pp.16-24, 1995 (SSCI)

Articles Published in Other Journals

I. **A construction matheuristic for multi-trip vehicle routing problem at Santa FE-INDONESİA**

Wouter De Boer J., Çavdar B., Süral H.

ENDÜSTRİ MÜHENDİSLİĞİ, vol.29, no.3, pp.31-41, 2018 (Peer-Reviewed Journal)

Refereed Congress / Symposium Publications in Proceedings

I. **Energy Minimizing Forklift Routing Problem**

ATASHI KHOEI A., SÜRAL H., TURAL M. K.

1st EUROYoung Workshop, Spain, 2 - 03 May 2019

II. **Multi-facility Green Weber Problem**

Atashıkhoeı A., Süral H., Tural M. K.

2018 EURO Working Group Conference on Sustainable Supply Chains, Amsterdam, Netherlands, 6 - 07 July 2018,

pp.11

III. **The inventory routing problem in rectangular warehouses**
SÜRAL H., ÇELİK M., Archetti C.
8th International Workshop on Lot Sizing, Glasgow, United Kingdom, 23 - 25 August 2017

IV. **Lojistik Köyler Üzerine**
Baydar A. M., SÜRAL H., ÇELİK M.
37.Yöneylem Araştırması ve Endüstri Mühendisliği Ulusal Kongresi, İstanbul, Turkey, 5 - 07 July 2017

V. **The Vaccination Campaign Routing Problem**
ÇELİK M., ÇAVDAR B., SÜRAL H.
2016 INFORMS Annual Meeting, Nashville, United States Of America, 13 - 16 November 2016

VI. **Coordinated Capacitated Lot sizing For Multiple Product Families With Setup Times**
Bayley T., SÜRAL H., Bookbinder J.
2016 INFORMS Annual Meeting, Nashville, United States Of America, 13 - 17 November 2016

VII. **Low Carbon Weber Problems**
Atashi Khoei A., TURAL M. K., SÜRAL H.
28th European Conference on Operational Research, Poznan, Poland, 3 - 06 July 2016

VIII. **Impact of Demand Stochasticity on Facility Layouts**
Efeoglu B., ÇELİK M., SÜRAL H.
28th European Conference on Operational Research, Poznan, Poland, 3 - 06 July 2016

IX. **Benders Decomposition for the Multi layer Telecommunication Network Design Problem**
Yuksel Ergun I., SÜRAL H., KIRCA Ö.
28th European Conference on Operational Research, Poznan, Poland, 3 - 06 July 2016

X. **The Two echelon Freight Transportation Network in City Logistics**
Farham M. S., SÜRAL H., İYİGÜN C.
28th European Conference on Operational Research, Poznan, Poland, 3 - 06 July 2016

XI. **Low Carbon Weber Problem**
Atashi Khoei A., TURAL M. K., SÜRAL H.
28th European Conference on Operational Research, Poznan, Poland, 3 - 06 July 2016

XII. **The storage replenishment problem in rectangular warehouse**
SÜRAL H., Archetti C., ÇELİK M.
International Material Handling Research Colloquium, Karlsruhe, Germany, 12 - 16 June 2016

XIII. **A Performance Measurement Framework and Solution Approach for the Integrated Facility Layout Problem with Uncertain Demand**
ÇELİK M., Efeoglu B., SÜRAL H.
International Material Handling Research Colloquium, Karlsruhe, Germany, 12 - 16 June 2016

XIV. **A Genetic Algorithm for the Traveling Salesman Problem with Pickup and Delivery Using Depot Removal and Insertion Moves**
Cinar V., ÖNCAN T., SÜRAL H.
Evo Applications 2010 Conference, İstanbul, Turkey, 7 - 09 April 2010, vol.6025, pp.431-433

Supported Projects

ÇELİK M., ÇAVDAR B., SÜRAL H., Project Supported by Higher Education Institutions, Gezici Proje Rotalama Problemi için Yenilikçi Çözüm Yaklaşımları, 2016 - 2016
SÜRAL H., ÇELİK M., Project Supported by Higher Education Institutions, Belirsizlik Altında Esnek Tesis Yerleşimi İçin Yenilikçi Yaklaşımlar, 2015 - 2015
SÜRAL H., İYİGÜN C., GÜREL S., Project Supported by Higher Education Institutions, Şehir Lojistiği için Lisans Araştırmaları, 2014 - 2015

Metrics

Publication: 55
Citation (WoS): 773
Citation (Scopus): 697
H-Index (WoS): 14
H-Index (Scopus): 15

Non Academic Experience

Management Sciences, University of Waterloo
Industrial Engineering Department METU
Industrial Engineering Department, METU
School of Business and Economics, Wilfrid Laurier University
Management Sciences, University of Waterloo
Technology Management, Insead
Industrial Engineering Department, METU
System Sciences Research Centre, METU