

ISLODE XII Program

Thursday, July 19th

9:45-10:00 **Opening**

10:00-11:30 **Facility Location Models I** **Chair: Ken-ichi Tanaka**

A Radius Formulation for a p -median Problem with Distance Selection

Sergio Garcia Quiles (Universidad Carlos III), Stefano Benati (University of Trento)

Vector Assignment Ordered Median Problem

Ting L. Lei (University of California, Santa Barbara),

Richard L. Church (University of California, Santa Barbara)

The Maximum Flow-Covering Location and Service Start Time Problem and Its Extensions

Ken-ichi Tanaka (The University of Electro-Communications)

12:45-14:15 **Applications I** **Chair: António P. Antunes**

Two Problems Related to School Planning

Dominique Peeters (Université catholique de Louvain),

Jorge Amaya (Universidad de Chile),

Eric M Delmelle (University of North Carolina at Charlotte),

Isabelle Thomas (Université catholique de Louvain),

Jean-Claude Thill (University of North Carolina at Charlotte),

Paula Uribe (Universidad de Chile)

Locating Child Care Facilities by the Integration of Kindergarten and Nurseries

Tsutomu Suzuki (University of Tsukuba)

Modeling the Essential Ingredients of Real-World Public Facility Planning

António P. Antunes (University of Coimbra), Maria C. Cunha (University of Coimbra),

Miguel G. Santos (University of Coimbra)

14:30-16:00 **Hub Location** **Chair: Dionisio Pérez**

Hub Location Under Uncertainty

Sibel A. Alumur (TOBB University of Economics and Technology),

Stefan Nickel (Karlsruhe Institute of Technology),

Francisco Saldanha-da-Gama (University of Lisbon)

A Hybrid Heuristic for the Robust Capacitated Fixed-Charge Hub Location Problem under Disruption and Demand Uncertainty

Ehsan Nikbakhsh (Tarbiat Modares University),

Seyed Hessameddin Zegordi (Tarbiat Modares University)

Locating Discrete Ordered Median Hubs by Variable Neighborhood Search

Dionisio Pérez (University of La Laguna)

16:30-18:00 Facility Location Models II Chair: Xiaofeng Nie

Protecting Hierarchical Facilities with Interdiction due to Decreasing Demand

Yuran CHOI (University of Tsukuba), Tsutomu SUZUKI (University of Tsukuba)

Linearization and Duality-Statements for Median-Location-Problems with Future Facilities

Andrea Wagner (Martin-Luther-University Halle-Wittenberg),

Kathrin Klamroth (University of Wuppertal),

Christiane Tammer (Martin-Luther-University Halle-Wittenberg)

A Stochastic Programming Model for Casualty Response Planning during Catastrophic Health Events

Aakil Caunhye (Nanyang Technological University),

Xiaofeng Nie (Nanyang Technological University)

Friday, July 20th

10:00-11:30 Railway Facility Location Chair: Juan A. Mesa

Optimization Models for Locating Railway Stations: Strategic and Tactical Planning

Hugo M. Repolho (École Polytechnique Fédérale de Lausanne),

Richard L. Church (University of California, Santa Barbara),

António P. Antunes (University of Coimbra)

A Tool for High-Speed Rail Systems Optimization: Application to a Synthetic Case Study

Ana Laura Costa (University of Coimbra), Maria C. Cunha (University of Coimbra),

Paulo A.L.F. Coelho (University of Coimbra),

Herbert H. Einstein (Massachusetts Institute of Technology)

Location of Stations on Railway Networks by Maximizing Trip Covering

Juan A. Mesa (University of Seville),

Federico Perea (Polytechnic University of Valencia),

Anita Schöbel (University of Göttingen)

12:45-14:15 Facility Location Models with Uncertainty Chair: Kathrin Klamroth

A Facility Dispersion Heuristic in the Case of Spatial Uncertainty

Ran Wei (Arizona State University), Alan T. Murray (Arizona State University)

Exact Solution Approaches for Location-Allocation Problems with Uncertain Environment

Markus Kaiser (University of Wuppertal)

Modeling Uncertainties in Location-Allocation Problems

Kathrin Klamroth (University of Wuppertal)

14:30-16:00 Continuous Facility Location I

Chair: Jörg Kalcsics

Joint Distribution of Distances to the First and the Second Nearest Facilities

Masashi Miyagawa (University of Yamanashi)

Locating a Median Strip in the Plane

Jack Brimberg (Royal Military College of Canada),

Robert Schieweck (University of Göttingen),

Anita Schöbel (University of Göttingen)

Location Problems on a Convex Polygon with Continuous Demand: Characterizing Structural Properties of Voronoi Diagrams

Jörg Kalcsics (TU Clausthal), Igor Averbakh (University of Toronto),

Oded Berman (University of Toronto), Dmitry Krass (University of Toronto)

16:30-18:00 Facility Location Models III

Chair: Oded Berman

Optimality Gap of Myopic Location Procedures

Yoshiaki Ohsawa (University of Tsukuba)

An $O(n^3)$ Time Algorithm for the Robust 1-center Problem on Trees

Cheng-Chung Li, Hung-I Yu, D. T. Lee

Facility Location and New Product Introduction

Oded Berman (University of Toronto), Dmitry Krass (University of Toronto),

Vahideh Sadat Abedi (University of Toronto)

Saturday, July 21st

9:00-10:30 Applications II

Chair: Takamori Ukai

An Optimisation Approach for the Location of Electric Vehicle Charging Stations from a Local Authority's Perspective

Lieselot Vanhaverbeke (Vrije Universiteit Brussel),

Kenneth Lebeau (Vrije Universiteit Brussel),

Cathy Macharis (Vrije Universiteit Brussel),

Luc Lebon (4IS NV, Electromobility Consulting)

Facility Location Models for Electric Vehicle Charging Stations

Ryosuke Yamanouchi (Nanzan University), Masahiro Yasuda (Nanzan University),

Mihiro Sasaki (Nanzan University)

Location Problem of Solar Generation Panel with Uncertainty

Takamori Ukai (University of Tsukuba)

10:45-11:45 Continuous Facility Location II

Chair: Anita Schöbel

A Minimum Location Problem Considering Inner Trips and Outer Trips in a Simple Space

Takeshi Koshizuka (Nanzan University)

Locating an Axis-Parallel Rectangle on a Manhattan Plane

Anita Schöbel (University of Göttingen),

Jack Brimberg (Royal Military College of Canada),

Henrik Juel (Technical University of Denmark),

Mark-Christoph Korner (University of Göttingen)

Monday, July 23rd

9:00-10:30 Emergency Facility Location

Chair: Keisuke Inakawa

Ambulance Facility Location Problem with Block-wise Accident Occurrence Probabilities

Hiroaki Ishii (Kwansei Gakuin University),

Yung Lung Lee (Chang Jung Christian University)

Evaluation of Spatial Mismatch of Ambulance Service in Tokyo

Takehiro Furuta (Nara University of Education), Hozumi Morohosi (GRIPS)

Considerations of an Influence of Congestions for Ambulance Location Problems

Keisuke Inakawa (Akita Prefectural University)

10:45-12:15 Network Design I

Chair: Alan T. Murray

An Efficient Heuristic for Generating Unsupported Non-dominated Solutions in a Bi-Objective Shortest Path Problem

Fernando Antonio Medrano (University of California, Santa Barbara),

Richard L Church (University of California, Santa Barbara)

A Linear Programming Model to Design a Road Network Robust against the Disruption of Roads at the Time of Disaster

Shungo Koichi (Nanzan University), Satoshi Yamazaki (Nanzan University),

Atsuo Suzuki (Nanzan University)

Deriving Shortest Distance in the Presence of Obstacles

Alan T. Murray (Arizona State University), Insu Hong (Arizona State University)

13:30-15:00 Applications III

Chair: Hidetoshi Miura

Optimum Depot Location in One-Way Carsharing Systems

Goncalo H. Correia (University of Coimbra),

António P. Antunes (University of Coimbra)

A Model to Simulate Delay in Train Schedule Caused by Crowded Passengers Using a Time-Space Network

Tetsuo Matsumoto (Chuo University), Azuma Taguchi (Chuo University)

Evacuation Simulation for Students from Nanzan University by Time-Space Network

Hidetoshi Miura (Nanzan University)

15:30-17:00 Facility Location Models IV Chair: Richard L. Church

Fully Polynomial Time Approximation Scheme for the Min-max k -Traveling Salesman Location-routing Problem on a Tree

Liang Xu (Southwestern University of Finance and Economics)

A Location and Allocation Model for Casualty Management during Nuclear Accidents

Aakil M Caunhye (Nanyang Technological University),

Xiaofeng Nie (Nanyang Technological University),

Mingzhe Li (Fukuoka University)

Unifying Concepts of Facility Dispersion

Richard L. Church (University of California, Santa Barbara),

Ting L. Lei (University of California, Santa Barbara)

Tuesday, July 24th

9:00-10:30 Continuous Facility Location III Chair: Justo Puerto

Big Triangle Small Triangle Algorithm for Multi-Weber Problem

Atsuo Suzuki (Nanzan University)

A Competitive Facility Location with Fuzzy Random Demands using Possibility Measure

Takeshi Uno (The University of Tokushima), Hideki Katagiri (Hiroshima University),

Kosuke Kato (Hiroshima Institute of Technology)

Continuous Location Problems with l_p Norms Revisited

Justo Puerto (University of Seville), Victor Blanco (University of Granada),

Safae El Haj Benali (University of Seville)

10:45-12:15 Facility Location Models V Chair: Giuseppe Bruno

Upper Bound and Approximate Algorithm for Sequential Competitive Facility Location Problem

Vladimir L. Beresnev (Novosibirsk State University)

A General Linearization Technique for Modeling Reliability in Facility Location: Applications to Problems with Site-Dependent Failure Probabilities

Jesse R. O'Hanley (University of Kent), Maria Paola Scaparra (University of Kent),

Sergio García Quiles (Universidad Carlos III de Madrid)

Properties of Equity Measures in Discrete Location Models

Giuseppe Bruno (University of Naples Federico II),

Maria Barbati (University of Naples Federico II)

13:30-15:00 Network Design II Chair: Stefan Nickel

Multi-Period Reverse Logistics Network Design

Francisco Saldanha-da-Gama (University of Lisbon),

Sibel A. Alumur (TOBB University of Economics and Technology),

Stefan Nickel (Karlsruhe Institute of Technology), Vedat Verter (McGill University)

A Location-Routing Problem Arising in the Operations of a Courier Services Provider: a Case Study from Fuerteventura Island in Spain

Miguel A. Pozo (University of Seville), Gilbert Laporte (HEC Montréal),

Juan A. Mesa (University of Seville), Francisco A. Ortega (University of Seville)

A Multi-Stage Stochastic Supply Network Design Problem with Financial Decisions and Risk Management

Stefan Nickel (Karlsruhe Institute of Technology),

Francisco Saldanha-da-Gama (University of Lisbon),

Hans-Peter Ziegler (BASF SE)

15:30-17:00 Applications IV Chair: Daisuke Watanabe

Expansion of Food Deserts: Relations between a Population Whose Resident Location is Shorter than n km to Nearest Retailers and an n km Area Population

Hiroshi Koto (Tohoku University of Art and Design),

Hidetoshi Miura (Nanzan University)

Assessment of Sexual and Reproductive Health Service Location in Rural Mozambique

Jing Yao (Arizona State University), Alan T. Murray (Arizona State University)

Optimal Facility Location of Fishery Logistics for Tsunami Reconstruction

Daisuke Watanabe (Tokyo University of Marine Science and Technology)

17:00-17:30 Closing