CIRRELT

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Canadian Operational Research Society
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CIRRELT / CORS (Montréal Chapter) joint seminar

Stefan Nickel
Karlsruhe Institute of Technology (KIT), Germany

Emergency Logistics in Healthcare

Abstract: Emergency Medical Services (EMS) face various planning problems that can be addressed with OR methods. Operational planning involves dispatching decisions that determine which ambulance to send to an emergency, while relocation strategies dynamically locate ambulances. Tactical decisions include ambulance allocation and shift planning. EMS coordination centers create shift schedules and assign call-takers and dispatchers based on availability, legal requirements like maximum shift lengths or rest days, and staff preferences for ride sharing or common lunch breaks.

Strategic planning decisions regarding ambulance station locations and EMS district design can be addressed using queuing theory, mathematical programming, simulation, and machine learning techniques, such as model parameterization. However, a crucial yet often overlooked step is ensuring that the chosen objective criteria genuinely contribute to enhancing patient care.

This talk will showcase planning problems and corresponding modelling approaches in emergency logistics, illustrating how OR can impact policy changes. Further information on our ongoing research and projects is available here.

Short biography: Stefan Nickel is a Full Professor at the Karlsruhe Institute of Technology (KIT) in Germany and one of the directors of the Institute of Operations Research, where he holds the Chair in Discrete Optimization and Logistics and serves as the speaker of the institute. Since 2011, he has also been one of the directors of both the Karlsruhe Service Research Institute (KSRI) and the FZI Research Center for Information Technology. In addition, he has been a member of the Executive Board at FZI since 2023. Stefan Nickel has authored or co-authored 13 books and more than 180 scientific articles in his research areas, including Locational Analysis, Supply Chain Management, Health Care Logistics, and Online Optimization.

Vendredi / Friday
10 octobre 2025 / October 10th, 2025

11:00

Université de Montréal
Pavillon André-Aisenstadt
Salle / Room: 5441

Ouvert à tous / Open to all

Responsable / Organizer :
Nadia Lahrichi

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