Tramp ship routing and scheduling with voyage separation requirements
Period: 27 May 2018 → 30 May 2018
Jesper Larsen (Guest lecturer)
Charlotte Vilhelmsen (Guest lecturer)
Richard Martin Lusby (Guest lecturer)
Department of Management Engineering
Management Science
Transport DTU
Operations Research
Degree of recognition: International
Documents:
Abstract-Book-ALL-v2-0

Related event

ROUTE 2018: International Workshop on Vehicle Routing, Intermodal Transportation and Related Areas
27/05/2018 → 30/05/2018
Snekkersten, Denmark
Activity: Talks and presentations › Conference presentations

ODYSSEUS (Event)
Period: 2018
Jesper Larsen (Member)
Department of Management Engineering
Management Science
Transport DTU
Operations Research
Description
Member of Program committee
Degree of recognition: International
Related event

ODYSSEUS
03/06/2018 → 08/06/2018
Cagliari, Italy
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

Tramp ship routing and scheduling with voyage separation requirements
Period: 17 Jul 2017
Jesper Larsen (Guest lecturer)
Charlotte Vilhelmsen (Other)
Richard Martin Lusby (Other)
Department of Management Engineering
Management Science
Transport DTU
Operations Research
Description
This presentation addresses a tramp routing and scheduling problem. Tramp ships operate like taxies by following the available demand, as opposed to liner ships that operate like busses on a fixed route network according to a published timetable. Tramp operators determine some of the demand in advance by ensuring long-term contracts. The rest of the demand comes from optional voyages found in the spot market. Routing and scheduling a tramp feet to best utilize feet capacity according to the current demand is therefore an ongoing and complicated problem. We add further complexity by
incorporating voyage separation requirements that enforce a minimum time spread between some voyages. We developed a new and exact Branch-and-Price procedure for this problem. A dynamic programming algorithm generates columns, while a novel time window branching scheme is used to enforce the voyage separation requirements. Computational results show that the algorithm finds optimal solutions very quickly for the vast majority of test instances. We compare the results with two earlier published methods and show that our Branch-and-Price approach outperforms both an a priori path generation method and an Adaptive Large Neighbourhood Search heuristic.

**Related event**

**IFORS 2017: 21st Conference of the International Federation of Operations and Research**

17/07/2017 → 21/07/2017
Québec City, Canada
Activity: Talks and presentations › Conference presentations

**Planning of Midwives**

Period: 4 Jul 2016
Charlotte Vilhelmsen (Speaker)
Jesper Larsen (Other)
Department of Management Engineering
Management Science
Operations Research

**Description**

At a hospital in Denmark around 40 midwives support the pregnancy of approx. 6000 pregnant women every year. Their role is to monitor the pregnancies and prepare the women for labour. Based on the due date of a woman, authority guidelines prescribe specific and mostly rather narrow time windows within which the pregnant woman should have consultations with a midwife. Therefore, once a pregnant woman enters the system, her sequence of consultations for the time period until labour is fairly fixed. There is a clear goal that, as far as possible, each pregnant woman should see the same midwife at every consultation. Every week the newly arrived pregnant women are assigned an arbitrary free time slot belonging to a specific midwife. In turn, this midwife is expected to have consultations with this woman in specific weeks according to the authority guidelines. This random assignment of pregnant woman to specific midwives, without any concern to the midwives’ future schedules, means that each midwife has a very unbalanced workload over the year. Furthermore, it means that there is an imbalance between the workloads of the different midwives. The aim of this project is therefore to devise a method that can make a fair distribution of pregnant women among the midwives. The distribution should result in a balanced work load for each midwife and a balanced work load among the midwives while at the same time making sure that the time windows for consultations are not violated.

**Related event**

**28th European Conference on Operational Research**

03/07/2016 → 07/07/2016
Poznan, Poland
Activity: Talks and presentations › Conference presentations

**The 9th Triennial Symposium on Transportation Analysis (Event)**

Period: 12 Jun 2016
Jesper Larsen (Participant)
Department of Management Engineering
Management Science

**Description**

Member of the the scientific program committee
Degree of recognition: International
Links:
http://tristan-symposium.org/

**Related event**

**The 9th Triennial Symposium on Transportation Analysis**
OptALI Industry Day
Period: 1 Jun 2015 → 2 Jun 2015
Jesper Larsen (Organizer)
Department of Management Engineering
Management Science

Description
Chair of the organisation of the OptALI Industry Days here at DTU

Related event
OptALI Industry Day
01/06/2015 → 02/06/2015
Lyngby, Denmark
Activity: Attending an event › Participating in or organising a conference

A heuristic and hybrid method for the tank allocation problem in maritime bulk shipping
Period: 6 Mar 2014
Charlotte Vilhelmsen (Speaker)
Jesper Larsen (Other)
Richard Martin Lusby (Other)
Department of Management Engineering
Management Science
Operations Research
Transport DTU
Degree of recognition: International
Documents:
Tank_Allocation_Abstract

Related event
3rd International Symposium on Combinatorial Optimization
04/03/2014 → 07/03/2014
Lisbon, Portugal
Activity: Talks and presentations › Conference presentations

The Tank Allocation Problem in Bulk Shipping
Period: 27 Sep 2013
Charlotte Vilhelmsen (Speaker)
Jesper Larsen (Other)
Richard Martin Lusby (Other)
Department of Management Engineering
Management Science
Operations Research
Transport DTU
Degree of recognition: International
Documents:
The_Tank_Allocation_Problem

Related event
Routing and Scheduling in Tramp Shipping - Integrating Bunker Optimization
Period: 4 Sep 2013
Charlotte Vilhelmsen (Speaker)
Jesper Larsen (Other)
Richard Martin Lusby (Other)
Department of Management Engineering
Management Science
Operations Research
Degree of recognition: International

Related event
OR 2013 - International Conference on Operations Research
03/09/2013 → 06/09/2013
Rotterdam, Netherlands
Activity: Talks and presentations › Conference presentations

EUME Workshop on Metaheuristics (Event)
Period: 2012
Jesper Larsen (Chairman)
Department of Management Engineering
Management Science
Operations Research

Description
Chair of organising committee

Related event
EUME Workshop on Metaheuristics
11/06/2012 → 13/06/2012
Kgs. Lyngby, Denmark
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

Triennial Symposium on Transportation Analytics (Event)
Period: 2010 → …
Jesper Larsen (Member)
Department of Management Engineering
Management Science
Transport DTU
Operations Research

Description
Member of program committee
Degree of recognition: International

Related event
Triennial Symposium on Transportation Analytics
20/09/2010 → 25/09/2018
Tromsø, Norway
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar