A Column Generation Approach to High School Timetabling Modeled as a Multicommodity Flow Problem

Árton P. Dorneles, Olinto C.B. de Araújo, Luciana S. Buriol

PII: S0377-2217(16)30539-2
DOI: 10.1016/j.ejor.2016.07.002
Reference: EOR 13828

To appear in: *European Journal of Operational Research*

Received date: 19 August 2015
Revised date: 1 July 2016
Accepted date: 2 July 2016

Please cite this article as: Árton P. Dorneles, Olinto C.B. de Araújo, Luciana S. Buriol, A Column Generation Approach to High School Timetabling Modeled as a Multicommodity Flow Problem, *European Journal of Operational Research* (2016), doi: 10.1016/j.ejor.2016.07.002

Highlights

- We model the high school timetabling problem with compactness requirements.
- We propose two new models using a multicommodity flow representation.
- We propose a column generation approach for providing lower bounds for the problem.
- We found tight lower bounds that can be generated faster than previous approaches.
- New best lower bounds were found for five from twelve well-known instances.