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MIR, mixing and network dual MIPs: a progress report

Laurence Wolsey
CORE
Université Catholique de Louvain
Voie du Roman Pays 34
Louvain-la-Neuve, 1348
BELGIQUE
wolsey@core.ucl.ac.be

Abstract

We survey results on mixing sets and their generalizations obtained over the last 2–3 years, as well as their applicability to constant and varying capacity lot-sizing problems. We then consider the addition of a simple or variable upper bound on the “continuous variable”, leading to effective formulations for lot-sizing with stock bounds, complementing earlier work. Finally we discuss how mixing sets and their generalizations can be viewed and reformulated in a unified way as MIPs over network dual matrices, along with some of the important open questions.