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# Negotiation based approach for collecting and recycling operations in circular economy

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## Abstract

Circular economy and zero waste paradigms consider that production and logistics processes must meet new levels of efficiency. In this work we address the problem of optimal planning of the collection and the recycling operations for a company operating recycling plants which process waste materials and sells “secondary” raw materials. The recycling is performed in a multi-stage process and the collection is performed via trucks. The output of the collection process is the input of the recycling planning operations. Moreover some operations are outsourced to third party operators. The problem is modeled as an optimization problem and solved with an auction based mechanism.

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