Fake Title:   
Using PCGTSP Algorithm for Solving Segment Cutting Problems

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*Keywords*: Include a list of 5-10 keywords.

1. INTRODUCTION

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# 2. SECTION

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# 3. NUMERICAL EXPERIMENTS

## 3.1. Experimental setup

For the purpose of evaluting algorithmsperformance, the special nesting plan was used, containing 19 plain parts and 24 contours, see Fig. 1. Feasible pierce points are also depicted along the contours.



Figure 1. Original nesting plan.

To modify set of cutting segments for the nesting plan, two bridges were added, as seen at Fig. 2, yielding 17 parts bounded by 22 contours. Thus, two new complex parts appeared, marked with figures 1 and 2 at Fig. 2.



Figure 2. Position of two bridges

Further, another four bridges were created at the original nesting plan, see Fig. 3, yielding 15 parts and 20 contours. Two new complex parts are also marked with figures 1, 2, and 3, where part 1 is identical to that of Fig. 2, while part 2 is bigger.



Figure 3. Position of four brdiges.

All three instances were solved to optimality with two algorithms: DP (Dynamic programming) scheme, see Chentsov et al. (2018), which is proven to find optimal solution for problem instances below 33 contours; new problem-specific Branch-and-Bound algorithm, see. Khachay et al. (2021), pre-seeded with solution by PCGLNS heuristics, see Khachay et al. (2020).

# 6. CONCLUSIONS

A conclusion section is not required. Although a conclusion may review the main points of the paper, do not replicate the abstract as the conclusion. A conclusion might elaborate on the importance of the work or suggest applications and extensions.

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