Mechanical Assembly Packing Problem using Joint Constraints
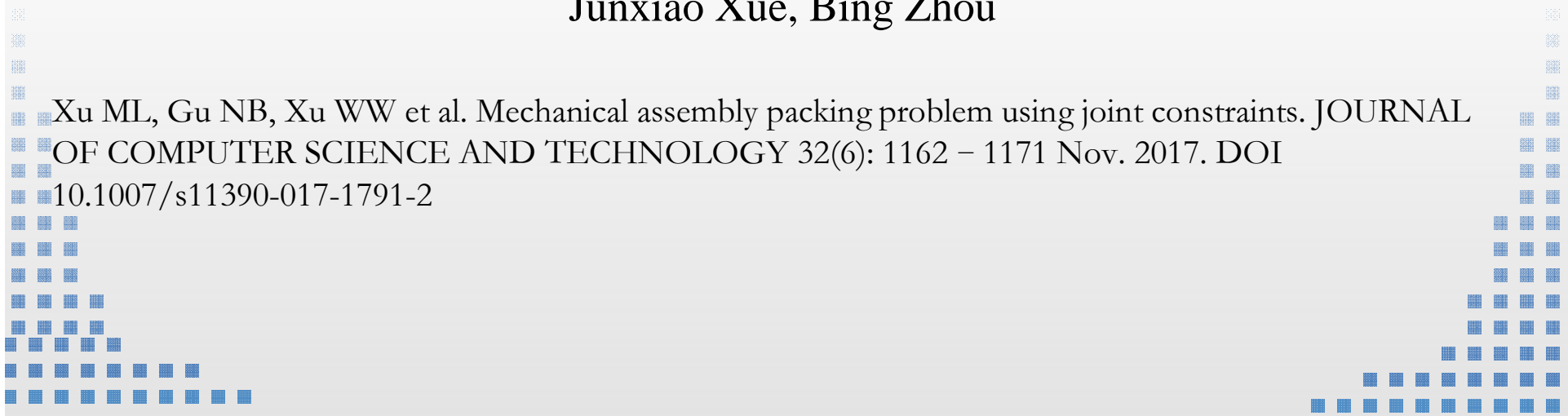
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Background

- The packing problem is on how to pack a group of items into a container with **the smallest packaging volume.**
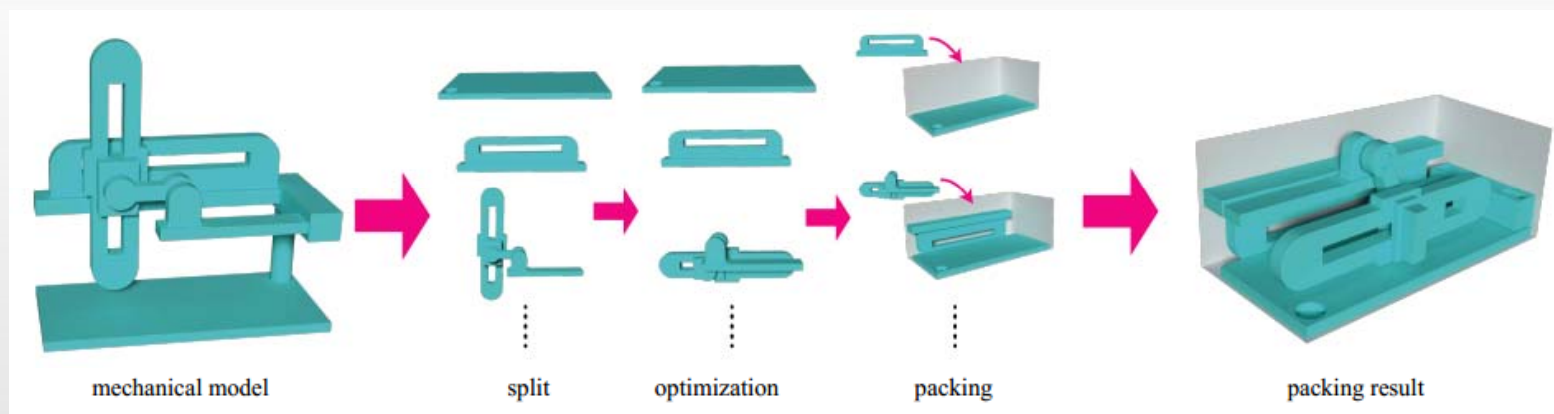
- **Combinatorial optimization problem.**

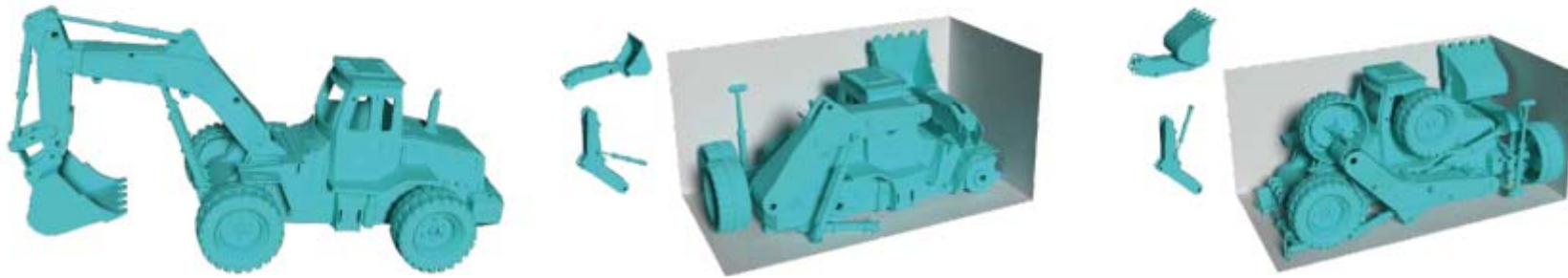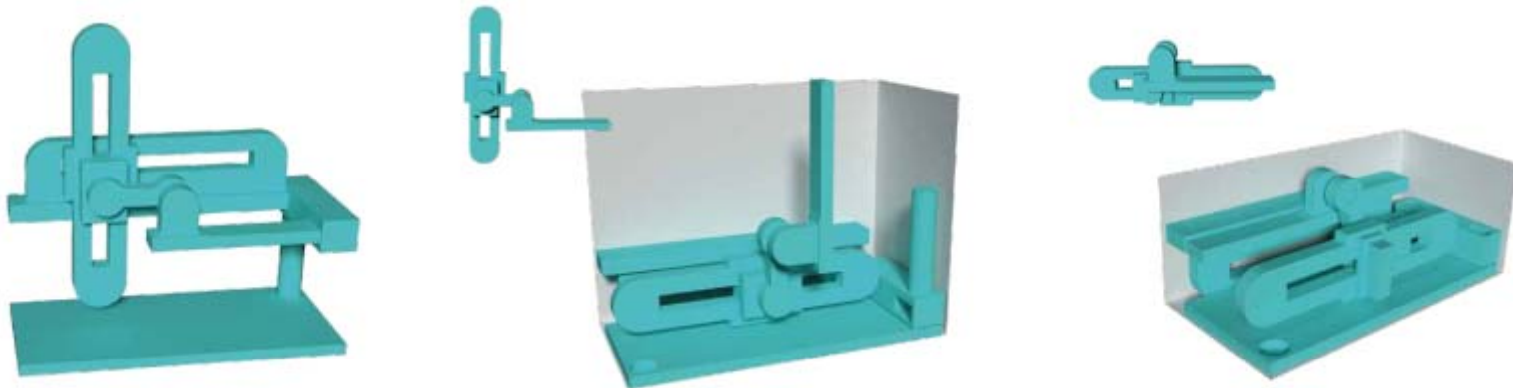Fig. 1. The packing procedure of a crank slider model

Our method-Framework

- Step1-Build the solution space of the search tree that contains all the splitting scheme;

- Step 2-Select a splitting scheme and split the mechanical model;

- Step 3-Minimize the volume of each group of the mechanical by optimizing joint parameters;

- Step 4-Pack and calculate whether meets the specified target!

Result

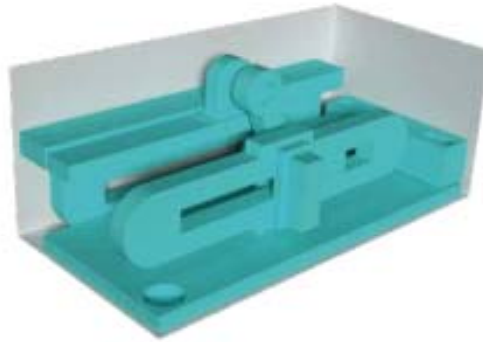(a) the input mechanical model   (b)packing result with Attene's algorithm   (c)packing result with our algorithm

Result

(a) bottom without extension   (b) bottom with extension of 25%