On the packing process in a shoes manufacturer

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Abstract: In this presentation we describe a real life application of a container loading problem for a children's shoes manufacturer. First, we choose the appropriate shoe box for each pair of shoes depending on the model and size before production starts. Then, the shoe boxes are packed in several cardboard boxes with variable dimensions. We present an integer programming model that chooses the shoe boxes for each model size, and a MINLP model which decides how to pack the shoe boxes and the size of cardboard boxes. This container loading problem is classified as open dimension problem, with three open dimensions. We approximate the MINLP model with a MILP and we compare it by using BARON on the former model and we run CPLEX on the latter model.

Bio: Manuel V.C. Vieira obtained his PhD from TU Delft in The Netherlands in 2008. In his research, he has covered topics such as interior-point methods and satisfiability. More recently he became interested in applying mathematical optimization to problems originating from industry, namely, layout problems and the container loading problem. In collaboration with Miguel F. Anjos, he has worked on various layout problems such as unequal-areas facility layout and multi-row facility layout. He is guest-editor for a special issue on facility layout for INFOR, the journal of the Canadian Operational Research Society. He is currently Assistant Professor at Nova University of Lisbon, and member of the research centers CMA-UNL (Portugal) and GERAD (Canada).

Thursday 22 March 2018, Pavillon André-Aisenstadt, Université de Montréal, room 4488.
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