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A NEW NONLINEAR MODEL FOR THE TWO-DIMENSIONAL RECTANGLE PACKING PROBLEM

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Abstract: This paper deals with the rectangle packing problem, of filling a big rectangle with smaller rectangles, while the rectangle dimensions are real numbers. A new nonlinear programming formulation is presented and the validity of the formulation is proved. In addition, two cases of the problem are presented, with and without rotation of smaller rectangles by 90°. The mixed integer piecewise linear formulation derived from the model is given, but with a simple form of the objective function.

Keywords: nonlinear programming; piecewise linear relaxation

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