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# Tool switching problems in the context of overlay printing with multiple colours

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## Abstract

This paper addresses problems arising in the context of overlay printing with multiple colors, where a finite set of jobs must be sequentially performed by a printing machine which can simultaneously accommodate a limited number of colors. Each job is associated with a subset of colors that the machine must have stored in its magazine before starting the execution. Thus, some color switches may be required between the execution of two consecutive jobs. Since color switches imply a reduction of productivity, minimizing them is desirable. In this regard, we address three distinct problems of increasing difficulty. For each problem we discuss its complexity and propose a mathematical programming model.

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