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# ACCEPTED MANUSCRIPT

### Analyzing Control Flow Information to Improve the Effectiveness of Process Model Matching Techniques

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#### Abstract

Process model matchers automatically identify activities that represent similar functionality in different process models. As such, they support various tasks in business process management including model collection management and process design. Yet, comparative evaluations revealed that state-of-the-art matchers fall short of offering high performance across varied datasets. To facilitate the development of more effective matchers, we systematically study, if and how the analysis of *control flow information* in process models can contribute to the matching process. In particular, we empirically examine the *validity of analysis options* and use our findings to automate the *adaptation of matcher configurations* to model collections. *Keywords:* BPM, process similarity, process model matching

#### 1. Introduction

Many organizations employ process models as a tool to document, develop, evaluate, and automate processes. Over the course of time, model

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