Relational Implementation of Simple Parallel Evolutionary Algorithms

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Abstract. Randomized search heuristics, among them evolutionary algorithms, are applied to problems whose structure is not well understood, as well as to hard problems in combinatorial optimization to get near-optimal solutions. We present a new approach implementing simple parallel evolutionary algorithms by relational methods. Populations are represented as relations which are implicitly encoded by (reduced, ordered) binary decision diagrams. Thereby, the creation and evaluation is done in parallel, which increases efficiency considerably.