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Your submission was recorded as follows:

Title: Automated Design of Hyper-Heuristics Components to Solve the PSP Problem with HP Model
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Preferred form of presentation: Oral
Main paper focus: Algorithmic

Abstract:
The Protein Structure Prediction (PSP) problem is one the modern most challenging problems from science. Simplified protein models are usually applied to simulate and study some characteristics of the protein folding process. Hence, many heuristic strategies have been applied in order to find simplified protein structures in which the protein configuration have the minimal energy. However, these strategies have difficulties on finding the optimal solutions to the longer sequences of amino-acids, due to the complexity of the problem and the huge amount of local optima. The Hyperheuristics have proved to be useful in this kind of context since they try to combine different heuristics strengths into a single framework. However, there is lack of works addressing the automated design of hyper-heuristics components. This paper proposes GEHyPSP, an approach which aims to the generation, through grammatical evolution, of selection mechanisms and acceptance criteria for a hyper-heuristic framework applied to PSP problem. We investigate the strengths and weaknesses of our approach on a benchmark of simplified protein models. GEHyPSP was able to reach the best known results in 7 instances from 11 that composed the benchmark set used to evaluate the approach.

Paper Topics:
SS24. Evolutionary Computation in Bioinformatics
1k. Heuristics, metaheuristics and hyper-heuristics
SS01. Evolutionary Computation for Automated Algorithm Design

Student Paper: Yes

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Thank you for your submission.

Sincerely,
Jose A. Lozano, IEEE CEC 2017 Conference Chair

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