

Evolving biomolecular oscillators

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Abstract

Biomolecular circuit design is a challenging problem, a problem that the natural process of evolution has tackled with considerable success in diverse contexts. However, the properties of an evolutionary design process and the kinds of designs that it can generate are generally unclear. Here, we propose to implement and study evolutionary computational techniques for the design of a biomolecular oscillator. Preliminary work has shown how certain evolutionary computations can give a wide variety of oscillators. Future work will study the properties of such a process and explore alternative evolutionary strategies. These results should be of use for both the design of oscillators as well as for understanding how evolution can work.