Responses to the comments of reviewers for the Parallel DE

# Reviewer 1

## 1. Comment

Equation (1) must be ended with point.

## RESPONSE

Done

## 2. COMMENT

The Abstract should contain answers to the following questions: What problem was studied  
and why is it important? What methods were used? What are the important results? What  
conclusions can be drawn from the results? What is the novelty of the work and where does  
it go beyond previous efforts in the literature?

## RESPONSE

## 3. COMMENT

Equation (2) must be ended with comma.

## RESPONSE

Done.

## 4. COMMENT

The authors are requested to add more details regarding their original contributions in this manuscript.

## RESPONSE

## 5. COMMENT

Papers cited in references section must be rewritten according to journal style before further process.

## RESPONSE

## 6. COMMENT

This paper should be polished in grammatical frame.

## RESPONSE

## 7. COMMENT

Equation (4) must be ended with comma.

## RESPONSE

Done.

## 8. COMMENT

What is the main advantage of this operator used in this paper when we compare via

* A study of aerial courtyard of super high-rise building based on optimization of space structure;
* Research on a reference signal optimization algorithm for indoor Bluetooth positioning;
* Automatic parameter selection ZVD shaping algorithm for crane vibration suppression based on particle swarm optimization;
* Mathematical simulation experiment based on optimization of heat treatment process of aluminum alloy materials.

## RESPONSE

# Reviewer 2

## 1. COMMENT

How does the proposed parallel algorithm differ from the classical island model of the evolutionary algorithm known for many years?

## RESPONSE

## 2. COMMENT

What are the advantages of applying the presented approach to the construction of the parallel Differential Evolution algorithm in comparison to other approaches to the construction of such an algorithm cited in the text?

## RESPONSE

## 3. COMMENT

Why are there no comparisons with other versions of the parallel Differential Evolution algorithm in the results of the experiments? Maybe then you would see some of its advantages compared to other algorithms because currently it is not clear what its advantages and disadvantages are.

## RESPONSE

## 4. COMMENT

What results are shown in tables 2 and 3? This should be described in the titles of the tables.

## RESPONSE

The title of Table 2 has been changed to:

“*Comparison of experimental results with “1 to 1” propagation scheme. The first column represents the name of the objective function and the remaining columns are the average function calls using 1 to 10 processing threads for the proposed method*”

The title of Table 3 has been altered to:

“*Experiments for the proposed method using different options for the propagation method. The number of processing threads was set to 10. Numbers in cells represent average function calls for every test function.*”

## 5. COMMENT

Are these average results from multiple runs of the algorithm? There is also no statistical analysis of the results obtained.

## RESPONSE

# Reviewer 3

## 1. COMMENT

The original DE method. What are the input and output variables of this algorithm? INPUT: … OUTPUT.

## RESPONSE

We have rewrite the algorithm of the original DE method according to this comment.

## 2. COMMENT

Same descriptions for the algorithm, presented in section “2.2 Proposed modifications”.

## RESPONSE

Done.

## 3. COMMENT

Description of Equation (4). What is this “R” something like correction factor. You have to describe it. Na matter that you show literature sources [58].

## RESPONSE

The following text has been added:

“*This random scheme for the calculation of the parameter F was used successfully to better explore the search space of the objective function.*”

## 4. COMMENT

Table 1. Are these values dimensionless?

## RESPONSE

We have added the corresponding information for each parameter in the table.

## 5. COMMENT

Figure 1. You have to add X and Y axis titles.

## RESPONSE

Done.

## 6. COMMENT

Page 8. Sinusoidal function. If “z” has a name, it will be good to write it.

## RESPONSE

The following text and an appropriate reference have been added:

*“**The parameter z is used to shift the location of the global minimum [*[*Sinu*](#LyXCite-Sinu)*].”*

## 7. COMMENT

Discussion part is missing. You have to compare your results with those from minimum 3 other papers.

## RESPONSE

## 8. COMMENT

Conclusion part. It is not clear how your work improves the known solutions in this study area.

## RESPONSE