2019 International Conference on Grey System & Kansei Engineering

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Abstract

Basic guidelines for the preparation of a technical work for the 2019 International Conference on Grey System & Kansei Engineering are presented. This document is itself an example of the desired layout (inclusive of this abstract) and can be used as a template.

Keywords: The author shall provide up to 5 keywords (in alphabetical order) to help identify the major topics of the paper.

1. Introduction

Grey system theory, proposed by Deng [1,2], can deal with systems with limited, incomplete (partially known) and/or uncertain information [3-5]….

2. GM(1,1) and DE Algorithm

2.1 GM(1,1)

Assume that the raw data sequence is …

2.2 Differential Evolution Algorithm

Like other EAs, DE algorithm starts with a …

$$\gamma(x_i(k),x_j(k)) = \frac{\Delta\min. + \zeta\Delta\max.}{\Delta_{oi}(k) + \zeta\Delta\max.} \tag{1}$$

Table 1 Real values of inbound arrivals of Taiwan from 2003 to 2014 and

		GM(1,1)		GA-based GM(1,1)	
Background value λ		0.5		0.47323	
Year	Real value	fitting value	Relative error (%)	fitting value	Relative error (%)
2003	2,248,117	2,248,117	0	2,248,117	0
2004	2,950,342	2,493,504.536	15.48	2,503,172.299	15.16

3. GBDE with Hybrid-type Gaussian Mutation Strategy

Step 1: Determine the population size *N* and the maximum number of generations .
Step 2: Randomly initialize all the target vectors in the search space and set the generation count *G* =1.

4. Experimental Results

Referred to [3], this study also takes the inbound arrivals of Taiwan from 2003 to 2014 as an experimental example. Table 1 lists the corresponding real values. The fitting values obtained by GM(1,1) ..…

Fig. 1 The Logo of JGS

5. Conclusions

Hybridizing current- and…

Acknowledgment

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References

[1]J. L. Deng, *Application of grey system theory*. Gauli Publisher, Taipei, 2000.
[2]K. L. Wen, C. S. Chou, H. C. Chang, H. Y. Chen and H. C. Wen, *The grey system theory*, Wunan Publisher, Taipei, 2013.
[3]H. T. Nan, "Design a grey prediction model based on genetic algorithm for better forecasting international tourist arrivals," *Journal of Grey System*, vol. 19, no. 1, pp. 7-12, 2016.
[4]H. Zhao and S. Guo, "An optimized grey model for annual power load forecasting," *Energy*, vol. 107, pp. 272-286, 2016.