



SDI Review Form 1.6

PART 1:

Journal Name:	British Journal of Mathematics & Computer Science
Manuscript Number:	2013_BJMCS_3381
Title of the Manuscript:	Pseudorandomness in Central Force Optimization

General guideline for Peer Review process is available in this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)

- This form has total 9 parts. Kindly note that you should use all the parts of this review form.



SDI Review Form 1.6

PART 2: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<u>Compulsory</u> REVISION comments	1. The optimization method described in the manuscript looks similar to the well known method of gradient descend, especially the equation 2 (acceleration is an analogue of the gradient, which is estimated via Eq. 1, meaning that the method can be called quasi-gradient descend). Therefore, an explicit comparison with gradient descend-type methods is required to show advantages of the proposed method constructively. The "gravity" analogy seems more confusing than helping, especially given the fact that the space is multidimensional, there is no velocity concept, and the notion of "mass" in the proposed optimization method is quite different from that in mechanics (as the author himself admits). 2. It looks like the author rediscovers what is very well known in the field of numerical optimization methods, namely, that the convergence strongly depends on the quality of initial approximation. This is exactly why the distribution of starting points makes a big difference. There is no need to discuss this well-known fact at length. Random number generators are often used for generating starting point sets as a	



SDI Review Form 1.6

	strategy in the “game against nature”, i.e., to increase chances that at least a few would work well on the objective function’s landscape. Instead of attempting to explain how “pseudo-random” or “arbitrarily chosen” variables differ from “true” random ones, the author should better discuss the task of selecting the set of initial approximations in the framework of Monte-Carlo approach that has substantial advantages over using regular procedures, especially for multi-dimensional spaces. 3. The quality of the illustration material does not seem acceptable for publication in a respectable journal. The Figures 10 or 11 do not look good at all. A detailed description (legend) should be provided for each figure and each table. Instead of tables such as Table 1, results of a statistical analysis are more appropriate (e.g., a histogram of the number objective function computations across runs). Statistical results presented in a compact form should be provided not just for one, but for all (or most) benchmark objective functions.	
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SDI Review Form 1.6

<u>Minor</u> REVISION comments	What abbreviations GSO and GA stand for is not immediately clear. It should not be assumed that every reader knows that GA stands for “genetic algorithm”, let alone that GSO means “glowworm swarm optimization”. Besides, GA is a rather wide and large set of algorithms (it is an approach to optimization), so it is not clear based on what reasons the author is comparing his method to that whole set.	
<u>Optional/General</u> comments		

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