SDI Review Form 1.6

PART 1:

Journal Name:	**British Journal of Applied Science & Technology**
Manuscript Number:	**2013_BJAST_4698**
Title of the Manuscript:	**ENTROPY IN THE ANALYSIS OF GAIT COMPLEXITY: A STATE OF THE ART**
Type of the Article	**Review**

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 7 parts. Kindly note that you should use all the parts of this review form.

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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)*
Compulsory REVISION comments	Below I listed my main comments for each section of the paper. **1) Introduction** 1.1) The introduction of the paper presents the concept of human gait and an overview of the approaches followed in the literature to analyse the human gait . I suggest to enrich this section adding further references. Moreover, you should add some lines to specify the type of sensors (or other tools) used in the literature to analyse the signals of interest. 1.2) At the end of the introduction you mention that there are different techniques to analyse the complexity of biological signals. Here you should clearly state the goal of this review paper and that you are focussing only on the entropy concept. 1.3)Finally, please, add a few lines (at the end of the introduction) to introduce the content of each section of the paper **2) Concept of entropy: Algorithm for estimating entropy**	

	2.1) At beginning of this section, when you introduce the concept of entropy by Shannon, please, add a reference. 2.2) You mention that " a range of studies" report that aging reduces entropy and impaired systems exhibit lower entropy than healthy. But here only one reference (24)is included. Please, add more references. 2.3) Please, rephrase the following statements in order to explain better the concept and add other references to justify your statements. Moreover please, explain better why it is not possible that for an injured subject the gait cycle is less regular and less predictable. *"As it is said above, ApEn and SampEn measure the degree of regularity of a time series. However, when the calculations above are applied to physiological data, impaired systems sometimes yield greater values of entropy than healthy systems (28). This is illogical, since an impaired system is less adaptive, less complex and more regular than a healthy system and it should yield a lower value of entropy. An explanation to this might be that both, ApEn and SampEn, are calculated on a single scale (29) where the structure and organization in higher scales of the series is not considered"* 2.4) Please, add a "Conclusion" section where you should underline the outcomes of this research work. You can use the final statement of the paper as starting point. However, it is suggested to elaborate a more detailed discussion.	

Minor REVISION comments	Please, find below some minor comments 1**)Abstract** First line : Non-lineal should be non-linear **2)Introduction** When you introduce the concept of human gait I suggest to add some lines in order to introduce different applications of gait analysis (including related references). **3)Applications of Entropy to the Analysis of Human Gait Complexity** Please, add more references to justify the following "In fact, some studies (35) yield consistent changes in ApEn values from a physiological perspective, but give numerical values that are characteristic of a period time series" **General comment** In general I suggest to enrich the paper with additional references.	
Optional/General comments	I think that the paper is of interest to the scientific community. Indeed, the review performed by the authors on the use of entropy to analyse human gait can be useful for a number of different research fields. To my opinion	

	this paper should be accepted. However, some points should be discussed and reviewed.	

Note: Anonymous Reviewer