



SDI Review Form 1.6

Journal Name:	British Journal of Mathematics & Computer Science
Manuscript Number:	2015_BJMCS_16147
Title of the Manuscript:	Stability analysis of glucose insulin dynamic system using matrix Lambert W function
Type of the Article	Original Research Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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



SDI Review Form 1.6

PART 1: 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	Plagiarism Issue: If one of the authors of this paper is Hiroshi Shinozaki then it's ok (as he seems to simply publish his prior thesis work). If none is, then the authors need to explain how their work is different from the referenced one. http://repository.lib.kit.ac.jp/opac/repository/10212/1613/KOU501.PDF Also make clear differences to http://arxiv.org/abs/1406.4738	We agreed with reviewer. The lemma and the proof are omitted now. Without lemma our result is obtained easily.
<u>Minor</u> REVISION comments	- What's the difference to http://repository.lib.kit.ac.jp/opac/repository/10212/1613/KOU501.PDF ? - If it's only that this is the Matrix Lambert W function instead of univariate complex version, then the authors need to consider the following:	• In our article, we described the general matrix-version of the Lambert W function, also we have provided a formula for the characteristic roots of glucose insulin dynamical systems with delay using the described method • Yes, we agree that our system is infinite dimensional. We have included some



SDI Review Form 1.6

	1. The proof of Shinozaki is for complex valued univariate Lambert W, not for Matirx Lambert W (that principal branch is right most to all other branches). It is not immediatley obvious why this should carry over to the matrix case. ase also address the points made in http://www.apmaths.uwo.ca/~djeffrey/Offprints/ISSAC2007.pdf about the problems with uniqueness of the matrix Lambert W function. It seems the authors take literature on univariate Lambert W function and apply it directly to matrix version. This is not correct and authors need to follow through with the matrix Lambert w version only. The univariate version is good for illustrationa nd intuition; but the proofs must be made exclusively with the matrix version. particular, the main result of the paper (Eq 3.10) is not necessarily correct/unique. According to the referenced paper above the solution is not unique but has infinitely many solutions (multiply by matrix U that commutes with J in paper; see Theorem 5 of referenced paper). Or show that your $J_k = B * \tau * \exp(-\tau * A)$ has only a unique possible U. How is this work different to Some Special Cases in the Stability Analysis of Multi-Dimensional Time-Delay Systems Using The Matrix Lambert W function By Gomez et al. (http://arxiv.org/abs/1406.4738) Seems to be the exact same topic and solutions.	more points in the manuscript regarding unique solution for the matrix Lambert W function. Also, we rearrange the introduction part as suggested by the reviewer.
--	---	--



SDI Review Form 1.6

<u>Optional/General</u> comments	Please re arrange the introduction paragraphs. They seem a bit unrelated to each other and jump around. For example, paragraph 2 is suddenly talking about Lambert W function; completely unmotivated from Paragraph 1.	