



SDI Review Form 1.6

Journal Name:	British Journal of Mathematics & Computer Science
Manuscript Number:	Ms_BJMCS_19209
Title of the Manuscript:	Machine Interference Problem with Reliable Server under Multiple Vacations Policy
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.

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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)
Compulsory REVISION comments	The manuscript contains a lot of lacks and errors that must be corrected. I list the errors I noticed after a quick review of the manuscript. 1. The manuscript is poorly edited. For example, mathematical symbols and notations should be written in italics. Or in some equations a strange symbol for λ is used. 2. There are many grammatical and spelling errors. Correct them! 3. I think the substantial part of the manuscript is solving the equations in Matlab. Why did not the author(s) show the code in Matlab? I think the author(s) should upload the code and give the link in references. 4. I think some sentences (even paragraphs) of the manuscript are redundant. For example, why did the author(s) copy the paragraphs in Section 4.1? 5. The author(s) claimed that the service rate is state dependent. But in the experiments only single value of the service rate is applied. Why? There is no explanation. Explain it! 6. The author(s) defined the state space in page 4. According to the definition of the state space the system can be also found in state 1,0. However for the state there is no equation in the equation system. Why? Fix it!	The errors noticed by this editor are now corrected and the MATLAB code attached. This has been corrected. The explanation for the service rate has been corrected. When there is no failed machine in the system the server continues taking multiple vacations until a failed machine arrive the system.



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	7. I think the author should depict the state space and possible transitions in a state transition diagram. It is difficult to check the equations without the diagram. 8. Page 7 – the equation system is formed by $1+2M$ equations. But the number of the equations does not correspond to the definition of the state space – the state space contains $2+2M$ states! 9. The formulas for $P_{i,n}(t+h)$ in Section 3.0 are not correct. In each formula $o(h)$ is missing, see for example http://www.win.tue.nl/~jadan/queueing.pdf. 10. In Section 3.0 the author(s) write(s): “The probability that there is no failed machine when the server is on multiple vacations in the interval $[t, t+h]$ is obtained as follows: consider the state of the system between t and $t+h$, first possibility is that at epoch t the system is on multiple vacations, one failed machine arrive and no service completion during the interval t and $t+h$. This has probability $P_{0,0}(t)[1-M\lambda h]$. The second possibility is that at epoch t the system is on multiple vacations, one failed machine arrive and no service completion during the interval t and $t+h$. This has probability $P_{1,1}(t)[\mu_1 h]$.” I think both sentences (red highlighted parts) are wrong! 11. Section 3.0, page 5 below: “The third possibility is that at epoch t the system is on multiple vacations and one failed machine arrives during the interval t and $t+h$. This has probability $[P]_{0,1}(t)\theta h$.” The sentence is also wrong because a failed machine has	The number of equations in the multiple vacations is $1 + 2M$ because the server is not active until there is a failed machine in the system. The $o(h)$ tends to zero in the mathematical formulation that is why it vanishes. The statement is not wrong; we are looking at every possibility of the server when it is on multiple vacations. So when the server
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	already been in the system at time t (because you use probability $P_{0,1}$) and during the time epoch h the server returns from vacation. 12. The author(s) compute(s) some performance measures, but no formulas are provided. 13. Why did the author(s) consider the measure $E(I)$, when the server cannot be idle ($P_{1,0}$ is always zero)? 14. Tables 3 and 4 – no information about μ is provided. 15. Table 5 – what is the meaning of α and β? What is $E(D)$? What is Var and STD? How did the author(s) compute them? 16. Why did not the author(s) provide any information about experiments with linear regression – a regression model, a coefficient of determination etc.? On the basis of my comments I think the manuscript must be improved thoroughly.	is on multiple vacations it is possible that a failed machine arrives the system. This has been corrected. It is a and b not α and β. They are define in the paper. This has been corrected. The definition is given in paper. This is explain in the paper.
<u>Minor</u> REVISION comments		
<u>Optional/General</u> comments		