



SDI Review Form 1.6

Journal Name:	British Journal of Mathematics & Computer Science
Manuscript Number:	2014_BJMCS_11768
Title of the Manuscript:	Analysis of an SI epidemic model with nonlinear incidence rate in an environmentally-driven infectious disease
Type of the Article	Research Article

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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 authors use a SI epidemic model to link within and between hosts. They get the thresholds for the separated system. They got the local stability of the separated system. The model is plausibly interesting. In the model, there are some problems to be solved. 1 For the modelling (2.4), why does the infected host have infectious ability? (2.7) is not a saturation function, since $\lim_{E \rightarrow \infty} g(E) = 0$. 2. For the stability of the system, the authors assume E to be a constant, the biological meaning is decreased and the two systems have no relations. 3. There some computation errors in the paper, please check clearly. (1) In page 104, R_{v_0} less or more than one is not equivalent to $X_2 X_3$ more or less than zero. (2) For proof of Theorem 3.2, the condition $b_1 b_2 - b_3 > 0$ is missing according to the Routh Hurwitz criterion. 4. In Figure 3, the I(t) and E(t) don't attend the equilibrium. 5. The authors don't give any biological explanation for the mathematical results.	1. The term $\frac{\lambda ES}{1 + \beta S}$ means that the susceptible host will be infected if it takes in the contaminations in the environment. (2.7) is not a saturation functions, and we revised the sentence in the manuscript. 2. Since the two systems have different time scale, for the slow system, the variable E will reach its stable state, so we can treat it as a constant. 3. (1) In page 104, we can get $X_2 X_3 > 0$ if $R_{v_0} < 1$. We verify that this is correct. (2) In the proof of Theorem 3.2, the condition $b_1 b_2 - b_3 > 0$ is added. 4. The parameters we used to plot the figures are not very suitable, so the I(t) and E(t) will attend the equilibrium only when the time is large enough. 5. We add some conclusion for biological explanation in the last section.
Minor REVISION comments		
Optional/General comments		