

Review of: "Counting Processes with Multiple Randomness: Examples in Queuing Theory"

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Potential competing interests: No potential competing interests to declare.

Dear Author,

I hope this finds you well. Below are my comments on your previously submitted paper. I hope these comments will help you improve your work.

- I am struck by the use of quotations to denote "events" when I don't think they should be used.
- You write about "a new type of counting process", but I do not see the novelty of the previously defined one, which, by the way, the other types are not defined either. I only see that a choice is made between independence or not of the random time sequence increments.
- There is a great lack of references, the literature is much more extensive when working with random times.
- The notation, for example, of the first equation on the first page, which is defined as a function of $\{i\}$, but the set is defined as a function of $\{j\}$. The relation between $\{i\}$ and $\{j\}$, if it exists, is not understood.
- The introduction does not mention previous work on random times and counting process, although there is a vast literature on the subject.
- I suggest that the paragraph describing the joint probability distribution be included as a remark; although it is a well-known probability result, it seems to me that the intention is to show the notation that will be used.
- Although a large number of practical examples are mentioned, they are neither shown nor referenced, so the sentences devoted to this concept are empty.
- On page 4, in the paragraph following the defined equations, it is not clear whether $\rho > 0$ or the probability. If it is the probability, this result is obvious when considering a continuous random variable.
- On page 7, in the last paragraph, a parameter θ and a distribution are mentioned, but at no point is the distribution given, nor the conditions on the parameter, if necessary.
- General comment: It is not clear to me, perhaps because of the way the paper is written, that the increments are not random, what I find debatable and worth studying is their independence. Although the paper is interesting, it seems to me that it lacks a lot to improve its presentation, especially the results considered. There is imprecision about the parameters

considered and their necessary assumptions, there is a great lack of literature on random times, counting processes and queueing theory. Some demonstrations are presented in a single paragraph, making them difficult to understand.