The authors of the paper being reviewed utilize the interpretation of compartmental systems as continuous-time Markov chains to derive entropy measures for quantifying model information content. Specifically, they measure the uncertainty of a single particle's path as it travels through the system as described by path entropy and entropy rates. The authors derive explicit formulas for both types of entropy in compartmental systems in equilibrium by leveraging Shannon information entropy. They demonstrate how these formulas can be applied to solve equifinality problems during model selection by means of MaxEnt.

The paper is valuable and contains plenty of interesting examples. Also, the argument used by the author seems to be true. For this reason, I think that is adequate to be considered as a publication of Mathematical Geosciences. However, I recommend to the authors improve the presentation of the main results in the paper. In the following, there are some comments.

1- Quality of Table 1 should be improved.

2- Furthermore, the font size of texts in Figures 2, 3 and 4 are too small to be seen, please make them as large as the caption for figures.

3- In references some new papers are missed. It is suggested to add or even replace some older references with the newer ones.

Also, the research idea of this paper needs to be verified by the **recent**ly relevant published articles. The authors should provide a literature review in order to identify relevant published articles on the chosen research topic.