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.

We added a description of the main columns and redraw the model structure using a font that matches equations. The entire table is now in LaTeX format.

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.

We carefully reviewed the recent literature and made updates in the manuscripts accordingly. However, it is important to mention that there are no many publications on the topic of entropy, information content, or complexity for compartmental dynamical systems. There is more recent literature related to the MaxEnt approach for modeling in general, but again, there is a lack of studies applying these concepts to compartmental dynamical systems. This situation highlights the relevance of our contribution because it fills an important gap for a particular class of models (compartmental systems) that are widely used in many scientific disciplines.