

Review of: "Time evolution and convergence of simple migration models"

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Potential competing interests: No potential competing interests to declare.

Kluge's study focuses on examining the temporal evolution of two mobility models: the Gravity and Radiation models. While the manuscript shows promise and is interesting, there are several areas that require improvement.

One notable concern is the lack of attention to detail in the presentation of the study. Firstly, there are some draft notes present at the end of Section I that should be addressed. Additionally, on page 1, the author mistakenly refers to Figure 2 instead of Figure 1. On page 3, when discussing Figure 5, the author should specify Figures 5a and 5b, rather than referring to Figure 5 in both cases. Furthermore, Figures 4 and 9 are not adequately discussed or mentioned in the text.

Another issue arises from the undefined term "population share," which is not clearly defined within the text. Additionally, on page 4, the author states, "One of the shapes we considered is a population distribution consisting of two square areas connected by a small corridor, see Fig. 6." However, the square areas mentioned cannot be identified in Figure 6.

The process through which the shaped population in Figure 7 was created needs to be explained.

Equations (16) and (17) require justification. If $m_i < m_j$ and $s_{ij} \sim s_{ji}$, it should result in $P_{ij} > P_{ji}$, contrary to what the author states.

The discussion regarding "Heterogeneous population cell sizes" is incomplete and needs further elaboration.

On page 6, the author claims, "we can see even though the pattern of the $t = 500$ and $t = 1000$ plots show roughly the same population distribution, the net change in population (left plot) still show high variations even for later times." However, if the population distribution remains largely unchanged, the author should provide an explanation for the observed variations in the net population change.

Overall, the manuscript has potential, but it requires significant revisions to address the mentioned issues and provide more comprehensive explanations and justifications for the presented results.