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

Jialin Bi[1]

1 Shandong University

Potential competing interests: No potential competing interests to declare.

The article employs two fundamental mobility models, namely the Gravity and Radiation models, to investigate long-term migration trends. The analysis focuses on studying the steady states and investigating the temporal dynamics within two distinct long-term scenarios. Furthermore, the dynamics are analyzed under two conditions: one where the population is divided based on gridded population divisions, and another where the population is divided into heterogeneous administrative units.

I recommend the author takes into consideration the following questions posed in the comments for their new manuscript:

1. In the Gravity Model, A,α,βand γ indicate fitting parameters. How is the range of values for these parameters determined?
2. Figure 1 displayed the ratio between in- and outflows of two distinct. The definition of pi and pj is unclear and needs further explanation.
3. Two different versions non-periodic boundaries and periodic boundary conditions are considered on a gridded population distribution with equally sized and spaced population cells. Which of these two conditions does ‘Heterogeneous population cell sizes’ fall under? Please give an explanation.
4. In the ‘Discrete Boundary Conditions’ section, they investigated the long-term dynamics of the Radiation model without periodic boundary conditions on different-sized. How many experiments were conducted at each size? Ensure statistical significance.
5. To ensure consistency in writing the formulas. E.g., in eleven pages of formulae, the formulae are inconsistently missing the brackets.

By addressing these questions, the author can provide further clarity.