1. Does the paper address relevant scientific modeling questions within the scope of GMD? Does the paper present a model, advances in modeling science or a modeling protocol that is suitable for addressing relevant scientific questions within the scope of EGU?
   Yes, pretty much. The paper presents an open-source radial diffusion model that is very useful for radiation belt modeling.
2. Does the paper present novel concepts, ideas, tools, or data?
   Yes, the paper presents a very elegant approach to test the numerical model.
3. Does the paper represent a sufficiently substantial advance in modeling science?
   The Crank-Nicolson scheme in solving diffusion equation presented in this paper is pretty standard. However, the method of manufactured solution (MMS) in code verification is relatively less known but is a very powerful tool.
4. Are the methods and assumptions valid and clearly outlined?
   Yes, pretty much. The methods are validation are clearly presented.
5. Are the results sufficient to support the interpretations and conclusions?
   Yes, pretty much. All the results and interpretations are very consistent and well explained.
6. Is the description sufficiently complete and precise to allow their reproduction by fellow scientists (traceability of results)? In the case of model description papers, it should in theory be possible for an independent scientist to construct a model that, while not necessarily numerically identical, will produce scientifically equivalent results. Model development papers should be similarly reproducible. For MIP and benchmarking papers it should be possible for the protocol to be precisely reproduced for an independent model. Descriptions of numerical advances should be precisely reproducible.
   Yes, pretty much. The model setup is clearly presented to ensure result traceability.
7. Do the authors give proper credit to related work and clearly indicate their own new/original contribution?
   Yes, pretty much.
8. Does the title clearly reflect the contents of the paper? The model name and number should be included in papers that deal with only one model.
   Yes, pretty much.
9. Does the abstract provide a concise and complete summary?
   Yes, pretty much.
10. Is the overall presentation well structured and clear?
    Yes, pretty much.

11. Is the language fluent and precise?
Yes, I enjoyed reading the paper very much.

12. Are mathematical formulae, symbols, abbreviations, and units correctly defined and used?
Yes, very much.

13. Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated?
Four places in the paper I like to see clarifications. (1) On page 2169-2170, it said Lmax is estimated by T01. Is T01 used throughout the calculation? Is L* calculated by assuming T01 magnetic field? If T01 is used, in producing the upper panel of Figure 1, is B field changing with time due to the temporal variation of solar wind condition? (2) The RadBelt code is written in Python, however, it said on page 2171-2172 that the routine of tri-diagonal matrix decomposition is written in C. Please comment on the interface between Python and C. (3) On line 21, page 2176, what is "false positive"? (4) In all the plots of |Yanalytic-Ynumeric|, there are 'dips' at large time step or grid size. Please comment on this.

14. Are the number and quality of references appropriate?
Yes, pretty much.

15. Is the amount and quality of supplementary material appropriate? For model description papers, authors are strongly encouraged to submit supplementary material containing the model code and a user manual. For development, technical and benchmarking papers, the submission of code to perform calculations described in the text is strongly encouraged.