This article provides a detailed introduction to the atmospheric moisture tracking model WAM2layers v3, covering its history, model formulas, numerical implementation, application cases, best practices, limitations, and future development directions. It serves as a comprehensive record of the model and offers important reference for research in related fields. That said, I have some concerns for the model authors.

First, the model's basic algorithm is still the same as its last version with similar limitations, i.e., the Eularian grid computation introducing instability over the polar areas. As a result, the polar grids are to be excluded. This caused a big problem in its application as the polar region can't be accounted within. There are many solutions that came up by the GCMs developers as bringing in the Gaussian grid, or using irregular grids like triangulars. I wonder if the authors had ever tried these methods to solve this edge problem?

L344, … and exacerbates numerical diffusion.

Here, if I understand it right, using too small a time step will not do even when the computation capability allows, because it exacerbates numerical diffusion? If so, which range will be good for this numerical scheme? Like the Courant number should not exceed unity but larger than 0.5? Is it possible to use variable time steps across the longitude? As Fig. 5 shows, in the equator, the grid is larger, the time step can be large; over high latitudes, the grid is smaller, the time step becomes small?

L426, 'upstream' or 'Godunov' scheme is known to be numerically diffusive.

If this upstream scheme is numerically diffusive, why not choosing other suitable schemes? Such as Lax-Wendroff scheme?

L450, Generalizing to N layers could potentially simplify the code

How could that possible? For example, dividing into 3 layers can simplify the code more than the current two layers?

Fig. 6. 54% was associated with transport across the domain boundaries.

What is the domain of this case? How can more than 50% of the moisture be lost through boundaries?

L358, Similary to similarly

L376, Van der Ent to “van der Ent”, and all the references as well from L720-730