General comments

Review of the paper "AerSett v1.0: A simple and straightforward model for the settling speed of big spherical atmospheric aerosol " by Mailler et al.

In this scientific paper authors present an alternative methodology for the calculation of the terminal velocities of spherical particles beyond the Stokes regime. The method includes a mathematical expression that approximates the non-analytical solution of the 1-D (vertical) equation of motion by circumventing the utilization of an iteration method which is originally needed. They show that the error of the methodology is acceptable with its maximum value to be around 2% for particles up to 1000μm.

The paper is well-written, well-organized, with a straightforward abstract and fulfills the main goal of the article. Although, some adjustments should be done in the Introduction section. The results are clearly presented in good-quality graphs and the conclusions are well established.

I suggest the publication of this work after some minor revisions.

Specific comments

Introduction in general: I suggest the authors to change the order of the first two paragraphs. This will help the reader to understand the topic's background and prepare him for more detailed and specific information that is given later. Also the introduction should include more papers of prior research on large dust particles.

Lines 10-11: What is large-particle correction? Authors should introduce that term in order a less engaged reader can understand better the meaning of the sentence.

Line 16: Please give the definition of giant particles.

Lines 16-17: References are needed here.

Lines 18-19: Why do we care about the missing from the models coarse dust particles. How do they affect the physical processes in the atmosphere?

Line 26: The authors state that Drakaki et al. (2022) use Clift and Gauvin (1971) correction and performed the bisection method once for each model size bin. The word "once" is a little confusing, since viscosity depends on pressure and temperature, which changes at each time step and in each model grid box. Thus, the terminal velocity is calculated accordingly at each time step, in each model grid box and for each model size bin, adapting the bisection method. This makes the code even more time consuming.

Line 51: The expression for air viscosity is missing.

Line 60: For $Re<0.1$ the consideration of free-slip correction should be added as it is described in Drakaki et al. (2022) and Mallios et al. (2020). Why did you omit it in both Stokes and Clift and Gauvin expressions? Could the consideration of the free-slip correction possibly change the methodology? By not including the slip-free correction, makes the methodology valid only for $Re \geq 0.1$.

Line 61: Please describe in detail the iterative method you used. Also in line 68.

Line 141: Please define the exact ranges that the expression is valid.

Line 142: Can you provide an estimation of the computational benefit of the method?

Technical corrections

Line 61: Eq.2 instead of Eq.1.

Line 61: Please insert the citation o Van Boxel properly.

Line 150: “excentricity” to “eccentricity”