

# Review of “A study on the drag coefficient in wave attenuation by vegetation” by Zhang et al.

In this study, the authors proposed a new hybrid method to link the two damping factors derived from two traditional approaches. Subsequently, the method was used to calibrate the drag coefficient and the relationship between the drag coefficient and relevant parameters ( $Re$ ,  $KC$ , and  $U_r$ ) were investigated. The paper is generally well-written. However, there are several major concerns that should be properly addressed before the paper can be considered to be accepted by this journal.

The major concerns:

1. The novelty of the manuscript: the authors mentioned that “Besides, based on local wave height, the exponential damping factor  $k'$  can be obtained easily by MS Excel, while the damping factor  $\alpha'$  needs professional numerical tools. Therefore, calculating  $\alpha'$  by the calibrated  $k'$  is much easier than calibrating  $\alpha'$  directly by the well documented Eq. (3) which is the advantage of the new method in this study.” I agree with the comments provided by the Reviewer#1 that this should not be the main novelty of this manuscript since the calibration of the damping factor  $\alpha'$  is a standard procedure and can be easily conducted by commonly used software (such as Matlab or R language).
2. The methodology: It appears that the key Equations (7)-(12) in this manuscript have been derived in the previous study by the authors (Zhang et al., *Acta Oceanol. Sin.*, 2021, in press). Thus, the main contribution lies in the study of the relation between the drag coefficient and three relevant hydraulic parameters? I would suggest the authors to clarify the relationship between their previous study and the current paper.
3. Figure 6: It appears that the proposed new method (Eq. 12) functions more or less the same as Eq. (3). Thus, with regard to the calibration of the drag coefficient, what's the difference between the new method and the method proposed by Dalrymple et al. (1984)?
4. The underlying mechanism and the difference between emerged and submerged conditions: one possible novelty could be the unified expression for the calibration of the drag coefficient both emerged and submerged conditions. However, can authors further explore the underlying mechanism and the difference between these two conditions by means of the new proposed method?

The minor comments:

1. Please carefully address all the minor comments provided by Reviewer#1.
2. Abstract: both equations and symbols should be avoided.
3. Figures 4-9: in both xlabel and ylabel, the  $C_d$  should be corrected as  $C_D$
4. Section 4 data collection: Please reorganize this section, for the time being, the authors simply list the collected data.
5. Figure 3: in the legend, “Calculated” → “Calculated”