CORRECTION

Correction to: Characterizing natural riparian vegetation for modeling of flow and suspended sediment transport

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Erratum to: J Soils Sediments

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The authors regret that the article contains a typing mistake in Eq. (5), with an u_C^2 term accidentally appearing at the right hand side of the squared brackets. Originally, Eq. (5) was correctly derived in Västilä and Järvelä (2014) and should read:

$$f'' = 4 \left[C_{D\chi,F} \left(\frac{u_C}{u_{\chi,F}} \right)^{\chi_F} \frac{A_L}{A_B} + C_{D\chi,S} \left(\frac{u_C}{u_{\chi,S}} \right)^{\chi_S} \frac{A_S}{A_B} \right] \quad (5)$$

Subsequently, the revised Fig. 6 with the corrected Eq. (5) is shown below. The typing mistake does not affect any of the results or conclusions presented in the article.

References

- Västilä K, Järvelä J (2014) Modeling the flow resistance of woody vegetation using physically-based properties of the foliage and stem. *Water Resour Res* 50(1):229–245. <https://doi.org/10.1002/2013WR013819>.

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Fig. 6 Usage of the flow resistance parameterization (Eqs. 2–6) in plant-scale, plant stand-scale, and reach-scale analyses at different relative submergences (h/H). The recommended characteristic approach velocities (u_C) are shown, with u_v denoting the mean velocity in the vegetated part of the cross-section. Equations are written for the drag force (F), vegetative friction factor (f''), drag-density parameter ($C_D a$), drag-area parameter ($C_D a H$) and vegetative Manning coefficient (n_{veg}) using the one-sided leaf area (A_L), frontal projected stem area (A_S), unit bed area (A_B), the leaf area per unit volume (a_L) and the stem area per unit volume (a_S). Values of χ_F , χ_S , $C_{D\chi,F}$, $C_{D\chi,S}$, $u_{\chi,F}$, and $u_{\chi,S}$ are reported in Table 2 for common riparian species. Note that all vegetative reference areas refer to the wet parts of the plants

a) Plant scale

For both $h/H \leq 1$ and $h/H > 1$, use depth-averaged mean velocity as u_C with:

$$F = \frac{1}{2} \rho \left[C_{D\chi,F} \left(\frac{u_C}{u_{\chi,F}} \right)^{\chi_F} A_L + C_{D\chi,S} \left(\frac{u_C}{u_{\chi,S}} \right)^{\chi_S} A_S \right] u_C^2 \quad (\text{Eq. 2})$$

b) Plant stand scale

(fully developed flow)

For $h/H \leq 1$, use mean velocity as u_C with:

$$f'' = 4 \left[C_{D\chi,F} \left(\frac{u_C}{u_{\chi,F}} \right)^{\chi_F} \frac{A_L}{A_B} + C_{D\chi,S} \left(\frac{u_C}{u_{\chi,S}} \right)^{\chi_S} \frac{A_S}{A_B} \right] \quad (\text{Eq. 5})$$

For $h/H > 1$, use $u_C = u_v$ and replace the $C_D a H$ parameter with:

$$C_D a H = C_{D\chi,F} \left(\frac{u_C}{u_{\chi,F}} \right)^{\chi_F} \frac{A_L}{A_B} + C_{D\chi,S} \left(\frac{u_C}{u_{\chi,S}} \right)^{\chi_S} \frac{A_S}{A_B} \quad (\text{Eq. 4})$$

c) Reach scale

Use $u_C = u_v$ and replace the $C_D a$ parameter in analytical or numerical models with:

$$C_D a = C_{D\chi,F} \left(\frac{u_C}{u_{\chi,F}} \right)^{\chi_F} a_L + C_{D\chi,S} \left(\frac{u_C}{u_{\chi,S}} \right)^{\chi_S} a_S \quad (\text{Eq. 3})$$

For practical applications in terms of Manning's n with $K=1 \text{ m}^{1/3} \text{ s}^{-1}$:

$$n_{veg} = \frac{K h^{1/6}}{\sqrt{2g}} \sqrt{C_{D\chi,F} \left(\frac{u_C}{u_{\chi,F}} \right)^{\chi_F} \frac{A_L}{A_B} + C_{D\chi,S} \left(\frac{u_C}{u_{\chi,S}} \right)^{\chi_S} \frac{A_S}{A_B}} \quad (\text{Eq. 6})$$