Corrigendum: Energetics of Slope Flows: Linear and Weakly Nonlinear Solutions of the Extended Prandtl Model

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A corrigendum on

Energetics of Slope Flows: Linear and Weakly Nonlinear Solutions of the Extended Prandtl Model
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In the original article, there were mistakes in **Figures 2**, **4**, **6** as published. The interaction term [last right-hand side term in **Equation (3)** of our published paper] was erroneously multiplied by the average heat conductivity constant. The corrected **Figures 2A–C**, **Figures 4A–C,** and **Figure 6** appear below.

> **Figure 2:** Correction of the original **Figure 2**, panels A–C. Only panel C is updated.
> **Figure 4:** Correction of the original **Figure 4**, panels A–C. Only panel C Is updated.
> **Figure 6:** Correction of the original **Figure 6**. Panels from C to H are updated.

The same error that led to the correction of **Figures 2**, **4**, **6** had an impact on the content of the paper. This error leads to five minor changes in several paragraphs:

(1) A correction has been made to Results, Katabatic flow, Nonlinear case, 1st paragraph. The following sentence (lines 11–12) is modified:

> Its amplitude is comparable to the other two governing terms in the energy equation.

(2) A correction has been made to Results, Anabatic flow, Nonlinear case, 1st paragraph. The sentences spanning the last 9 lines of the paragraph have been modified as follows:

> In contrast to katabatic flow, the *TE* diffusion *DIF* now departs from the dissipation *DIS* toward lower values (**Figure 4C**). Also, while in both katabatic and anabatic flow the amplitude of *INT* is comparable in magnitude to *DIF* and *DIS,* the sign of *INT* is now reversed, becoming negative in the case of anabatic flow.

(3) A correction has been made to Results, Energetics: Katabatic and Anabatic Flows, 5th paragraph. Here, several numerical estimates are now corrected and the following sentence (lines 9–11) is modified:

> Also, *INTmax* varies from ∼0.01 J/kg/s to ∼ 0.07 J/kg/s in katabatic flow, while it is negative and varies from ∼ −0.07 J/kg/s to ∼ −0.01 J/kg/s in anabatic flow.

(4) A correction has been made to Results, Energetics: Katabatic and Anabatic Flows, 6th paragraph. Again, several numerical estimates are now corrected and the following two sentences (line 6–10 and 13–16) are modified:
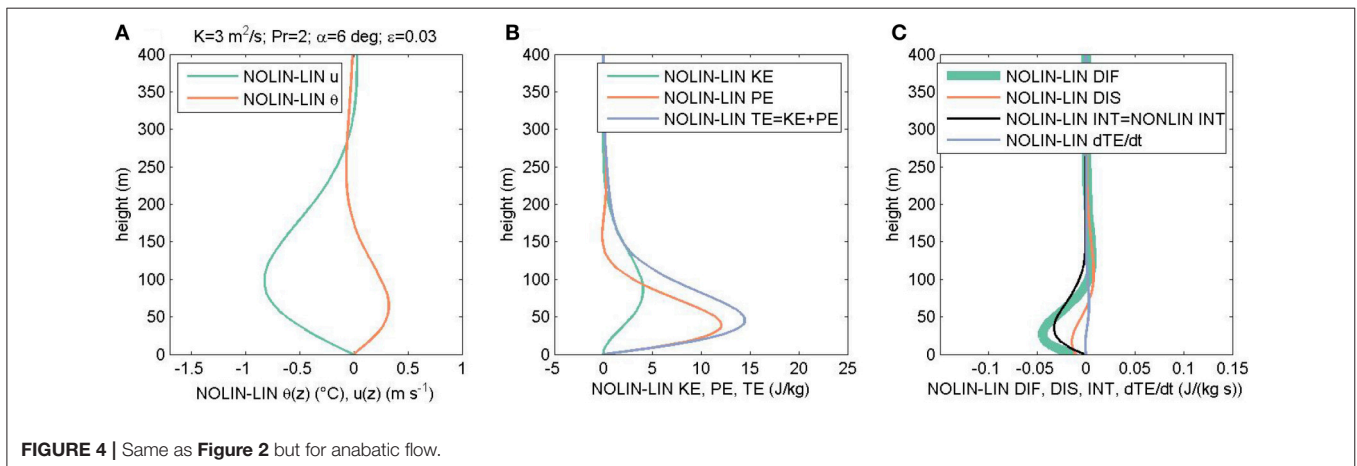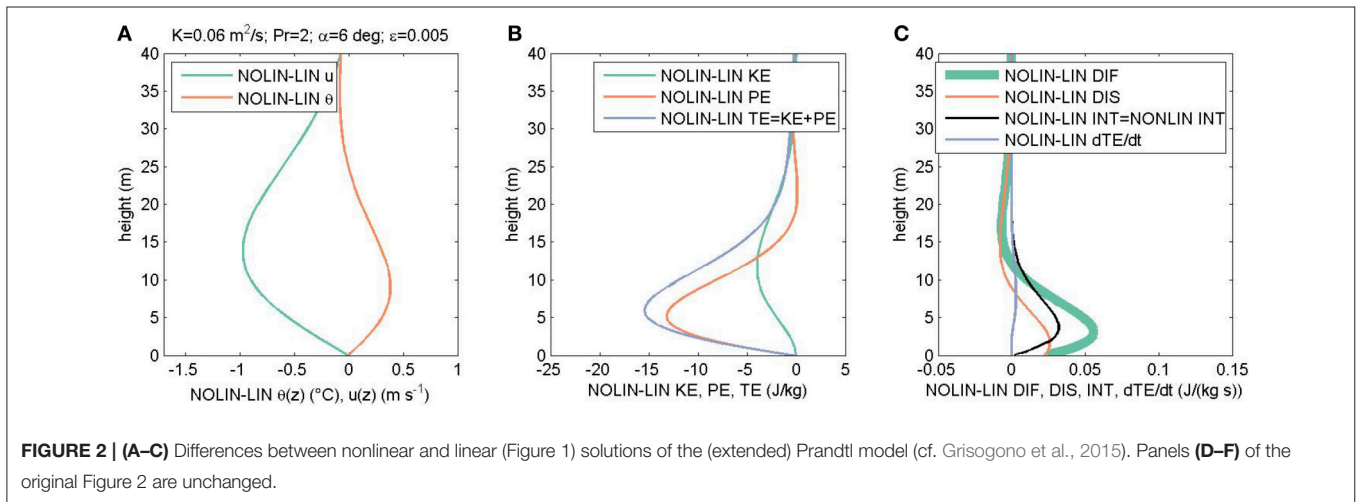
> For nonlinear katabatic flow, and based on the specific selection of model parameters, maximum values of $\partial TE/\partial t$ range from $\sim 10^{-3}$ J/kg/s to ~ 0.01 J/kg/s at heights ranging from ~ 6 to ~ 10 m (**Figures 6C,G**).
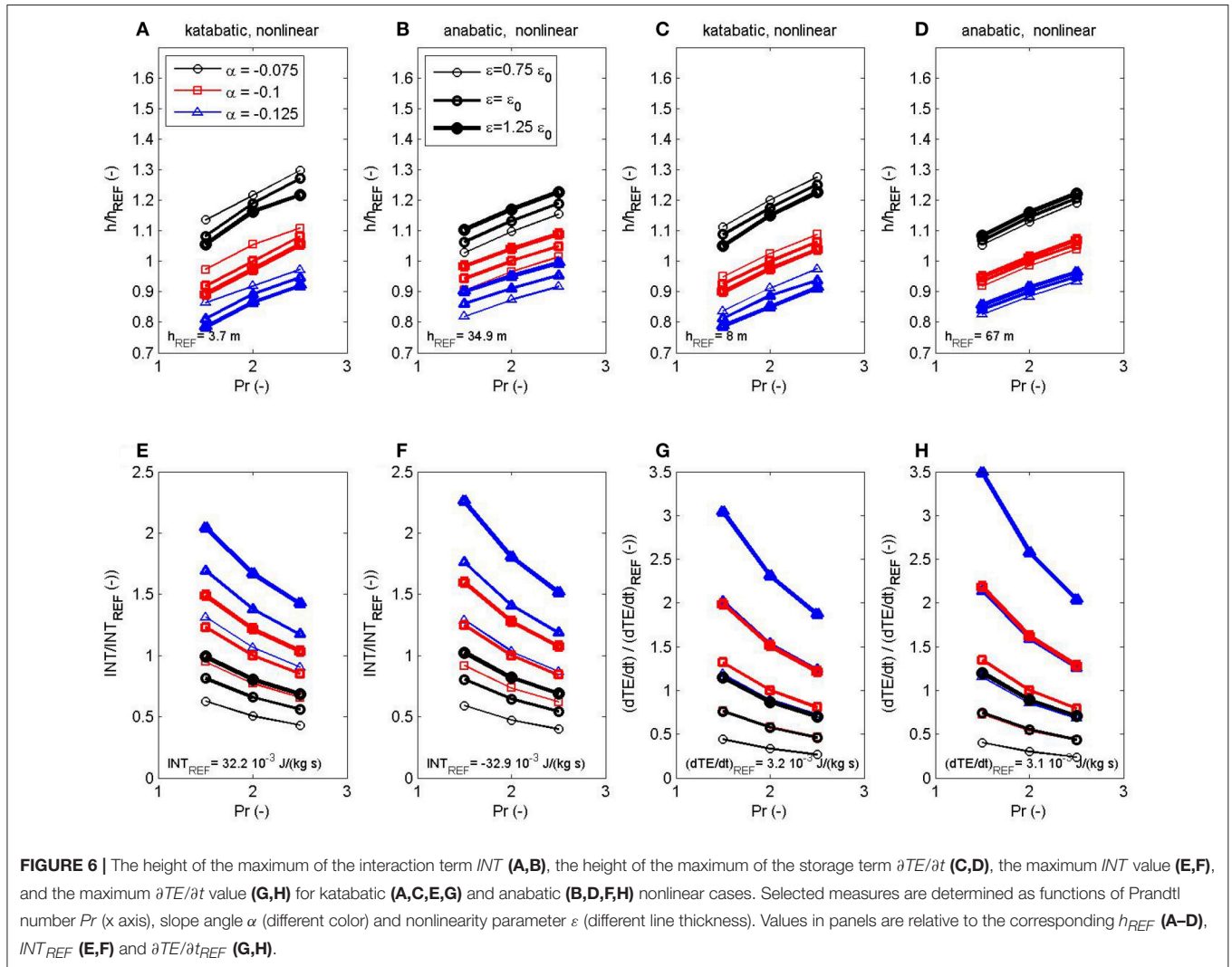>
> For the nonlinear anabatic flow, maximum values of $\partial TE/\partial t$ range from $\sim 10^{-3}$ J/kg/s to ~ 0.01 J/kg/s at heights ranging from ~ 55 to ~ 82 m (**Figures 6D,H**).

(5) A correction has been made to Discussion, 4th paragraph. The following sentence from the 2nd half of the paragraph (lines 27–31) is modified:

> Also, imbalance among the energy terms in this nonlinear model may suggest that there is perhaps no real steady-state nonlinear slope flow; thus, excursions from pure steadiness could occur in nonlinear thermally driven flows.

The authors apologize for the computational error. Although the correction of this error had an impact in several places in the published paper, there are no changes in the scientific conclusions.

FIGURE 2 | (A–C) Differences between nonlinear and linear (Figure 1) solutions of the (extended) Prandtl model (cf. Grisogono et al., 2015). Panels (D–F) of the original Figure 2 are unchanged.

FIGURE 4 | Same as Figure 2 but for anabatic flow.

FIGURE 6 | The height of the maximum of the interaction term *INT* **(A,B)**, the height of the maximum of the storage term $\partial TE/\partial t$ **(C,D)**, the maximum *INT* value **(E,F)**, and the maximum $\partial TE/\partial t$ value **(G,H)** for katabatic **(A,C,E,G)** and anabatic **(B,D,F,H)** nonlinear cases. Selected measures are determined as functions of Prandtl number *Pr* (x axis), slope angle α (different color) and nonlinearity parameter ε (different line thickness). Values in panels are relative to the corresponding h_{REF} **(A–D)**, INT_{REF} **(E,F)** and $\partial TE/\partial t_{REF}$ **(G,H)**.

REFERENCES

Grisogono, B., Jurlina, T., Večenaj, Ž., and Güttler, I. (2015). Weakly nonlinear Prandtl model for simple slope flows. *Q. J. R. Meteorol. Soc.* 141, 883–892. doi: 10.1002/qj.2406

Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.