

Errata for PhD Thesis

Snow Contamination of Cars

Friday 10th June, 2022

PhD Thesis

Location: Section 2.3, p 25, Eq. (2.65), *typo*.

Error: $m_p \frac{d^2 \mathbf{U}_p}{dt^2} = \sum_{\forall i} \mathbf{F}_i$.

Correction: $m_p \frac{d\mathbf{U}_p}{dt} = \sum_{\forall i} \mathbf{F}_i$.

Paper II

Location: Paper II, p 318, Line 1 second column, *misprint*

Error: Eq. (2).

Correction: Eq. (1).

Location: Paper II, p 322, Eq. (2), *typo*.

Error: $d = \left(\frac{16\sqrt{6}E^*}{135\pi} \right)^{2/5} \frac{\xi R \rho_s^{3/5} V_i^{6/5}}{\left(\frac{q_m}{T_m} (T_m - T) + \frac{\rho_l - \rho_s}{\rho_s} \left(P_m - \xi \left(\frac{40}{\pi^4} \rho_s V_i^2 E^{*4} \right)^{1/5} \right) \right)}$.

Correction: $d = \left(\frac{16\sqrt{6}E^*}{135\pi} \right)^{2/5} \frac{\xi R \rho_s^{3/5} V_i^{6/5}}{\left(\frac{\rho_l q_m}{T_m} (T_m - T) + \frac{\rho_l - \rho_s}{\rho_s} \left(P_m - \xi \left(\frac{40}{\pi^4} \rho_s V_i^2 E^{*4} \right)^{1/5} \right) \right)}$.

Location: Paper II, p 325, Last sentence of Chapter 4, second column, *typo*.

Error: $e_n = \sqrt{1 - \xi^2}$.

Correction: $e_n = \sqrt{1 - \xi}$.

Location: Paper II, p 325, Eq. (18), *typo*.

Error: $V_H = \frac{3C}{2\pi(1-\xi)} \exp\left(\frac{G_0^+}{k_b T}\right) (d_H/\varepsilon)^{1.5}$.

Correction: $V_H = \frac{3C}{2\pi(1-\xi)} \exp\left(\frac{G_0^+}{k_b T}\right) (d_H/\varepsilon)^{1.5} \frac{1}{\rho_s R}$.

Paper III

Location: Paper III, p 2, Eq. (1), *typo*

Error: $h = L_e - (L_f + c)$.

Correction: $h = L_e - (L_f - c)$.

Location: Paper III, p 2, Eq. (3), *Equation error*.

Error: $\alpha \pm \delta\alpha \approx \pm \left(\arctan\left(\frac{2(h+\delta h)}{D_B}\right) \right)$.

Correction: $\alpha \pm \delta\alpha \approx \alpha \pm \left(\arctan\left(\frac{2(h+\delta h)}{D_B}\right) - \alpha \right)$.

Location: Paper III, p 3, Eq. (6), *typo*.

Error: $\hat{\phi} = \frac{4\pi A_p}{P}$.

Correction: $\hat{\phi} = \frac{4\pi A_p}{P_z^2}$.

Location: Paper III, p 6, *typos*

Error in text under Section 3.4 as well as Table 2.

Error: The fall heights for RG 1 and RG 2 were incorrectly written as $H = 0.17$ m.

Correction: The fall height for RG 1 and RG 2 were $H = 0.175$ m.

Location: Paper III, p 8, Fig. 16, *Calculation error*

Error: The calculation of Co was incorrectly done for figure causing low values of Co .

Correction: A corrected version of the figure is shown in Fig. E1.

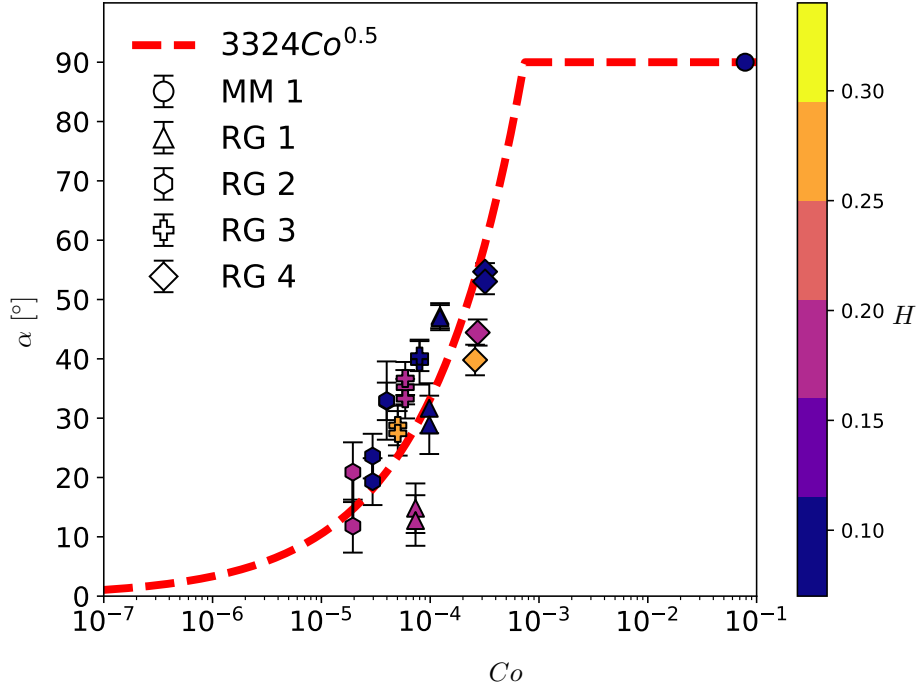


Figure E1: The α of snow as a function of Co for different snow samples, with coloring indicating H . The mean values of repeated trials are plotted with the error bars representing $\delta\alpha$. Dashed red line showing $\alpha = 3324\sqrt{Co}$.