**Table S1:** Comparison of results of plume center heights $\mathbf{h_{center}}$ for MITRAS and IBJPluris for different selected cases (case numbers based on Table C1).

| Case name & number | $v_{wind}$ [m $s^{-1}$] | $v_{exit}$ [m $s^{-1}$] | $T_{exh}$ [°C] | Γ [K · 100 $m^{-1}$] | MITRAS | | IBJPluris | | min(\|$\Delta h_{MITRAS}$ - $\Delta h_{Pluris}$\|) [m] |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | $h_{center, MITRAS}$ [m] | $\Delta h_{MITRAS}$ [m] | $h_{center, Pluris}$ [m] | $\Delta h_{Pluris}$ [m] | |
| Default settings (8) | 5 | 10 | 300 | -0.65 | 110 | 58 | 76 – 92 | 24 – 40 | 18 |
| Low wind speed (2) | 2 | 10 | 300 | -0.65 | 160 | 108 | 117 – 151 | 65 – 99 | 9 |
| high wind speed (36) | 15 | 10 | 300 | -0.65 | 76 | 24 | 61 – 66 | 9 – 14 | 10 |
| low exit velocity (25) | 5 | 4 | 300 | -0.65 | 104 | 52 | 71 – 82 | 19 – 30 | 22 |
| high exit velocity (27) | 5 | 12 | 300 | -0.65 | 112 | 60 | 79 – 95 | 27 – 43 | 17 |
| low exhaust temperature (7) | 5 | 10 | 200 | -0.65 | 102 | 50 | 77 – 91 | 25 – 39 | 11 |
| high exhaust temperature (9) | 5 | 10 | 400 | -0.65 | 116 | 64 | 79 – 95 | 27 – 43 | 21 |
| unstable condition (33) | 5 | 10 | 300 | -1.2 | 112 | 60 | 78 – 93 | 26 – 41 | 19 |
| very stable condition (28) | 5 | 10 | 300 | +0.5 | 100 | 48 | 77 – 91 | 25 – 39 | 9 |