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| **Symbol** | **Description** | **Units** |
| *h* | Plume height | m |
| *hcal* | Calibrated plume height | m |
| *bw* | Radar band width | m |
| *d* | Distance from the vent | m |
| *Δh* | Plume height uncertainty | m |
| *fi* | Weight factor | - |
| *N* | Number of plume height data | - |
| *Min* | Minimum estimate of plume height | m |
| *Max* | Maximum estimate of plume height | m |
| *s* | Combined error of plume height estimation | m |
| *H* | Plume centreline height | m |
| *Q* | Source mass flux at the vent | kg s-1 |
| *c* | Constant of the empirical MER models | varying |
| *ρ* | DRE of magma erupted | kg m-3 |
| *a* | Constant of the Gudmundsson 0D model | - |
| *k1* | Scaling factor of Gudmundsson 0D model | - |
|  | Plume height-averaged buoyancy frequency | s-1 |
|  | Plume height-averaged wind speed | s-1 |
| *ρa0* | Atmospheric reference density | kg m-3 |
| *g* | Gravity acceleration | m s-2 |
| *g’* | Reduced gravity | m s-2 |
| *α* | Radial entrainment coefficient | - |
| *β* | Wind entrainment coefficient | - |
| *z1* | Maximum non-dimensional height of buoyant plumes by Morton et al. (1956) | - |
| *H0* | Plume centreline height in a quiescent environment | m |
|  | Dimensionless wind strength parameter | - |
|  | Wind gradient from the base to the reference height | s-1 |
| *H1* | Reference height | m |
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