Supplement to: Modelling the size distribution of aggregated volcanic ash and implications for operational atmospheric dispersion modelling

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Figure S1: Sensitivity of the output aggregated GSD to the sticking efficiency parameters (a) $St_{cr}$, (b) $q$, and the physical characteristics assigned to the particles, (c) particle density ($\rho_s$) and (d) input GSD. Output is for 12:00 UTC on the 05/05/2010, plume height 5500 m asl.
Figure S2: Sensitivity of the output aggregated GSD to the sticking efficiency parameters (a) $St_{cr}$, (b) $q$, and the physical characteristics assigned to the particles, (c) particle density ($\rho_s$) and (d) input GSD. Output is for 13:00 UTC on the 06/05/2010, plume height 10000 m asl.
Figure S3: Sensitivity of the output aggregated GSD to the sticking efficiency parameters (a) $St_{cr}$, (b) $q$, and the physical characteristics assigned to the particles, (c) particle density ($\rho_s$) and (d) input GSD. Output is for 12:00 UTC on the 07/05/2010, plume height 5500 m asl.
Figure S4: Sensitivity of the output aggregated GSD to the entrainment coefficients (a) $k_s$, (b) $k_n$, the fraction of dry air (c) $n_d$ and water vapour (d) $n_v$, the temperature of the plume at the source (e) $T_0$ and the source mass flux (f) $Q_m$. Output is for 19:00 UTC on the 04/05/2010, plume height 7000 m asl.
Figure S5: Sensitivity of the output aggregated GSD to the entrainment coefficients (a) \( k_s \), (b) \( k_n \), the fraction of dry air (c) \( n_d \) and water vapour (d) \( n_v \), the temperature of the plume at the source (e) \( T_0 \) and the source mass flux (f) \( Q_m \). Output is for 12:00 UTC on the 05/05/2010, plume height 5500 m asl.
Figure S6: Sensitivity of the output aggregated GSD to the entrainment coefficients (a) $k_s$, (b) $k_n$, the fraction of dry air (c) $n_d$ and water vapour (d) $n_v$, the temperature of the plume at the source (e) $T_0$ and the source mass flux (f) $Q_m$. Output is for 13:00 UTC on the 06/05/2010, plume height 10000 m asl.
Figure S7: Sensitivity of the output aggregated GSD to the entrainment coefficients (a) $k_s$, (b) $k_n$, the fraction of dry air (c) $n_d$ and water vapour (d) $n_w$, the temperature of the plume at the source (e) $T_0$ and the source mass flux (f) $Q_m$. Output is for 12:00 UTC on the 07/05/2010, plume height 5500 m asl.