Figure S1. The frequency (%, ratio of occurrence cities to total NCP cities) of SO_4^{2-}, NO_3^-, NH_4^+, OC, and gaseous pollutants (SO_2 and NO_2) in the NCP from June 1 to July 31, 2021. The color shading represented different categories classified by SO_4^{2-}, NO_3^-, NH_4^+, OC, and gaseous pollutants levels. The red dash boxes represent three typical $PM_{2.5}$ and O_3 pollution episodes.
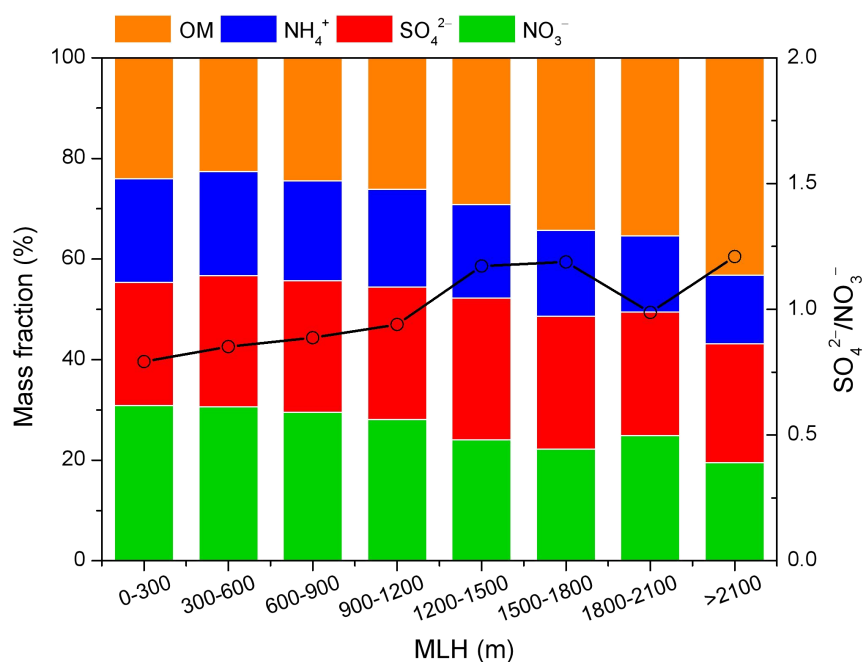
Figure S2. The mass fractions of major $PM_{2.5}$ components and the mass ratio of SO_4^{2-} to NO_3^- in different MLH conditions.
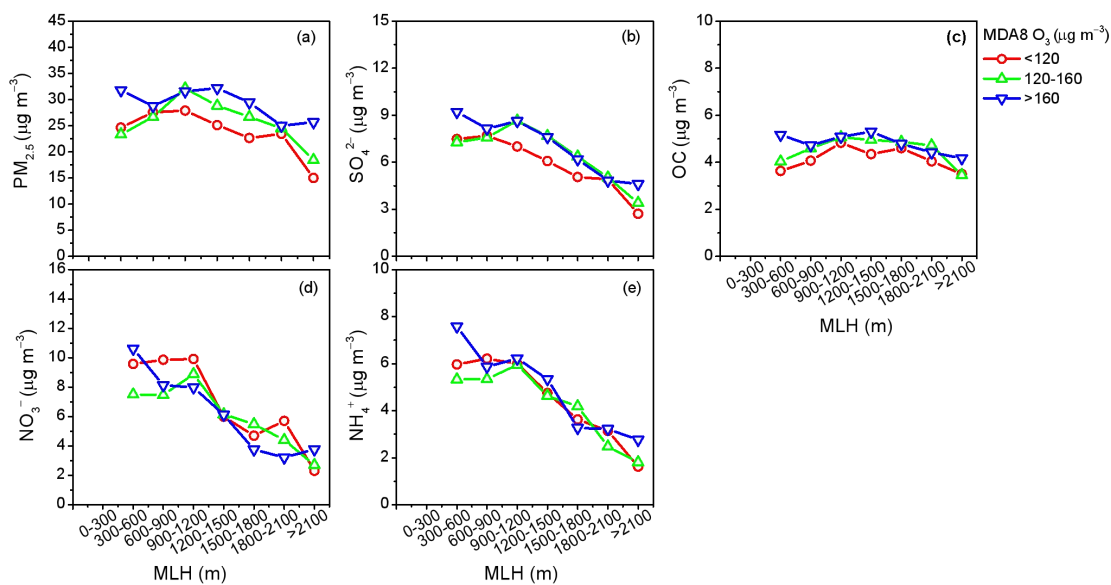
Figure S3. The distribution characteristics of (a) $PM_{2.5}$, (b) SO_4^{2-}, (c) OC, (d) NO_3^-, and (e) NH_4^+ concentrations with the evolution of MLH under different MDA8 O_3 conditions. Note that rainy days were excluded.