The point by point response to the short comment

1. Authors did not talk about the drying of ambient aerosol which would bias the aerosol optical properties measurements due to hygroscopic nature of ambient aerosol.
Response: The first set of experiments in this study accounted contribution of the semi-volatile aerosols to the total aerosol number concentration. We clearly observe a significant loss in aerosol number at each TDD set temperature (detailed summary in Table 2 of the manuscript). If only hygroscopic growth dominated aerosol optical properties, then a significant particle loss at each temperature would not have occurred. Hence it is appropriate to refer to optical properties due to loss of the semi-volatile aerosol.

2. Since typical relative humidity (RH) at Kathmandu would be 60 % or higher, this will have a large impact on scattering measurements. There is evidence that on changing RH from 40 to 90 % scattering changes by the factor of 1.6 at the green wavelength (Arnott et al., 2003). Were the data corrected for RH?
Response: For the scattering study, TSI integrating nephelometer 3563 was used. This nephelometer uses an internal 75 Watts DC halogen lamp. The heat created by this lamp in the measurement column doesn't allow the internal RH to reach as high as ambient conditions. Further, during the entire experiment, the average difference in RH values between wet and dry nephelometer was below 4% (scatter plot below). The statistical analysis shows both the instruments did not have significant RH differences over the entire measurement duration. The slope was near to 1 and thus, compared to the particle loss, the RH difference within both the instruments was not significant.

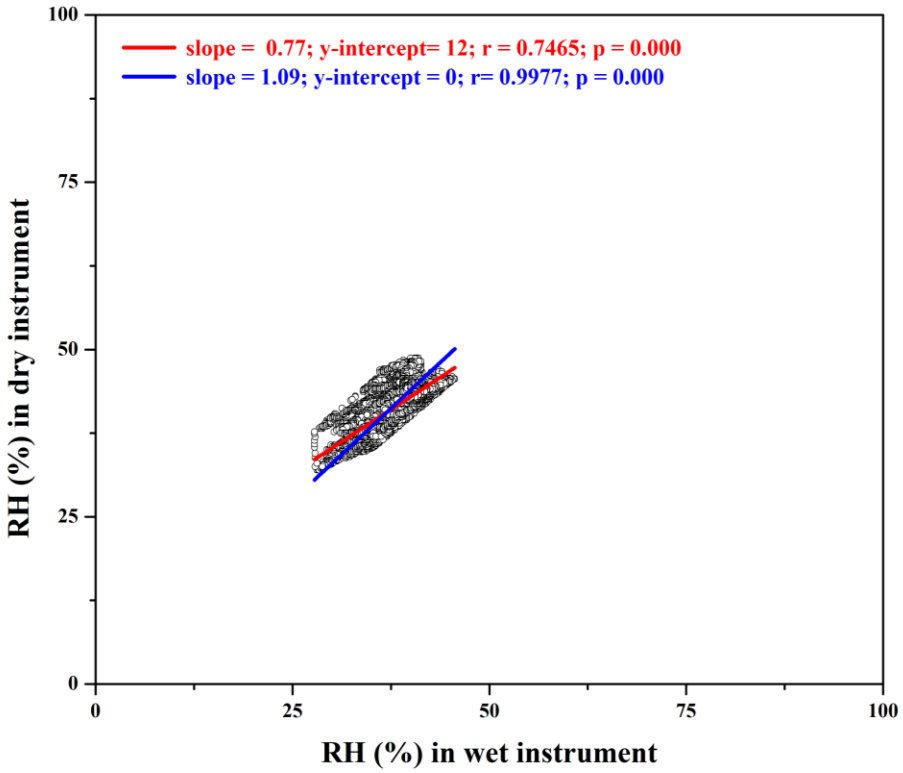

Fig: Correlation plot between RH in wet and dry nephelometer measured during entire sampling duration.

3. There will be particle loss in thermal denuder due to thermophoretic and diffusional processes (Wehner et al., 2002). In addition, activated carbon used in the cooling section also introduce additional particle losses. Past studies show 10-30 % of particles losses in Thermal denuder with activated carbon in cooling section depending on flow, TD configurations, and the set point temperature (Pokhrel et al., 2017; Fierz et al., 2007; Wehner et al., 2002). This loss will impact particles number concentration as well as optical measurements. How authors account this effect in their study?

Response: As mentioned in the manuscript (Line 206-213), TDD was operated at room temperatures to account for the particle losses due to thermophoretic and diffusional losses. We report a 12% particle loss when TDD was operated at room temperature. However, it is not possible to quantify particle loss due to TDD column and semi-volatile aerosols at higher TDD set temperatures at the same time. Hence, authors believe that this problem was properly addressed and do not require further investigation. Proper references have also been presented in the manuscript regarding use of similar thermal analytical methods for studying volatility and composition of ambient aerosol (Ishizaka & Adhikari, 2003; Murugavel & Chate, 2011). Similar experiments with TDD set at room temperature were conducted with number concentration, size distribution, absorption and scattering to quantify the respective losses due to TDD column.