Impact of turbulence on aerosol vertical distribution measured by lidar at Chung-Li (25°N, 121°E)

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Abstract

Aerosol backscattering signals measured by lidar have shown large fluctuations resulting from the turbulence of air in the lower atmosphere. The height difference between the aerosol backscattering signals and turbulence signals is relative with aerosol size and concentration distribution as demonstrated by multi-wavelength lidar measurements. The heights and evolutions of aerosol boundary layer can also be determined by using the turbulence property. From three years observations (2002-2004), we found that the aerosol boundary layer shows seasonal and height variation. The concentration of ground pollutants has been affected by this seasonal and height variation of aerosol boundary layer. The detailed studies and results will be presented and discussed in the conference.