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- The aerosol optical characteristics in the East Asian cities of Fukuoka and Beijing were measured from 2010 to 2014. Previously, few long-term, season-crossing observations have been reported.
- In Fukuoka, the annual means of the extinction, scattering, and absorption coefficients $C_{ext}$ (525 nm), $C_{sca}$ (525 nm), and $C_{abs}$ (520 nm) were 74.6, 66.1, and 8.1 Mm$^{-1}$, respectively, whereas those in Beijing were 412.1, 367.2, and 42.4 Mm$^{-1}$, respectively (Fig. 1). The single-scattering albedos $\omega_0$ (525 nm) in the two cities were 0.877 and 0.868, respectively (Fig. 2). The asymmetry factors $G$ (525 nm) in the two cities were 0.599 and 0.656, respectively. The extinction Ångström exponents $\alpha_{ext}$ in the two cities were 1.555 and 0.855, respectively. The absorption Ångström exponents $\alpha_{abs}$ in the two cities were 1.106 and 0.977, respectively.
- $C_{ext}$, $C_{sca}$, and $C_{abs}$ showed a seasonal variation in both cities. Some aerosol properties also showed a seasonal variation. In particular, the seasonal variation in $\alpha_{abs}$ was clear in both cities; it tended to be small in summer and large in winter (Fig. 3).