

This is a good paper that should be published after many minor revisions. Most corrections are typical of Asian writing. Section 4 is difficult to follow and is not well supported. A figure showing the bimodal GF is in order. However, this section could be removed. Several definitions are needed.

Define refractory, non-refractory, MDL, OA, PM1, downweighting, standard density, rush hours, epsilon (in Fig. 9), and SNR. Citation needed for PMF.

- L11. Correspondences singular. Were to was. Delete 1st the.
- L13. Change infer to imply.
- L15. Delete the.
- L18. Delete the.
- L26. Delete from its surrounding.
- L27. Particle plural. Delete the.
- L30. Rogers. Delete to be.
- L32. Add s to influence. Delete on.
- L33. Change it to hygroscopicity.
- L35. Delete problem. Change under a to with.
- L36. Add ity to humid. Delete condition.
- L40. Add Kim et al. 2011. Move the after of.
- L42. Insert the after of. Delete the.
- L43. Measurement plural.
- L44. Change mixture to mixing.
- L45. Delete would.
- L46. Change can to could.
- L47. Measurement plural. Insert a after for.
- L48. Mixture plural.
- L51. Delete values.
- L54. Delete their. Locations singular.
- L61. Delete the.
- L63. Delete of aerosols.
- L65. Estimates.
- L67. Various.
- L73. Delete 1st the.
- L75. Delete 2nd the. Area plural.
- L81. Change in to to.
- L82. Delete last the.
- L82-3. Move SMA in front of air.
- L83. Delete of.
- L89. Delete from a global perspective.
- L91. Delete the. Delete territory. Korea.
- L94. Delete last the.
- L98. Delete 2nd the.
- L99. Insert a after by. Insert a after and.
- L110. Measurement plural.
- L113. Delete the. Move road (singular) in front of traffic (singular). Delete on the.
- L116. Change such to this. Condition plural.

- L118. Insert the before campaign. Value plural.
- L120. Delete those.
- Fig. 1 caption. Blank to black.
- L129. Insert only before briefly.
- L130. Insert a after by.
- L131. Add ity to humid.
- L132. Delete condition.
- L133. Insert a after with.
- L134. Change conducted to checked.
- L135. Measurement plural.
- L137. Change and to to.
- L138. Insert the before HTDMA.
- L141. Delete 1st the.
- L152. Spheres singular.
- L156. Delete resolution.
- L160. Matters singular.
- L162. Result plural. Characteristic plural. Matters singular.
- L164. Spectrum plural (spectra).
- L171. Change the to a.
- L177. Compositions singular.
- L179. How can PM1 be on both sides of this apparent equation? Explain?
- L197 and beyond; superscript -3.
- L216. Measurement plural.
- L218. Change It to This.
- L220. Change as to to be.
- L221. Insert an after showed.
- L222. Insert the after of.
- L224. Inert the after as. Move UK before coastline. Delete in. insert a before forested.
- L225. Environment plural.
- L227. Remove d from ranged. Delete from.
- L228. Change smaller to lower.
- L230. Change it to this.
- L238. Move closure after hygroscopicity. Delete on.
- L240. Change with to for.
- L241. Delete the.
- L245. Change relatively to mostly.
- L246. Delete the.
- L264. Change It to This.
- L266. Change accompanied to used.
- L270. Line plural twice.
- Figure 4 should be color or made into separate panels or do both.
Caption. Solid lines. 1:1 relationship. Regression lines.
- L281. Insert the after from.
- L282. Change ing to ed.
- L298. Insert an after as.
- L299. Explain equations.

L303. Name this ion.
L305. Correspondences singular.
L308. Name this ion. Change why to that.
L313. Change one to organic fraction.
L320. Delete as.
L321. Change in to for.
L337. Insert these after of. Measurement plural. Particle plural.
L339. Is the inorganic ammonium sulfate?
L340. HOA twice?
L341. 50% of what?
L342. Delete sharp.
L343. Delete clearly. Only up to 800 nm. Note in Fig. 6. Delete 1st the.
L344. Even larger.
L347. Change considerable to more.
L348. Change in to during.
L350. Delete 2nd the. Photochemistry. Delete reaction. Insert more after is. Change It to This.
L351. Delete 2nd the.
L353. Insert the after on.
L354. Add er to small. Add r to large.
L354-6. Do these apply to 50 or 150nm or both.
L369. Delete value.
L370. Citation?
L372. Delete values.
L373. Insert state after oxidation.
L373-4. This sentence needs a rewrite. I do not know what is being said.
L376. Insert the before inorganic. This sentence needs a rewrite. I do not know what is being said.
L377. Delete values twice. Change that to the volume fraction.
L378. Move sizes after particle (singular). Delete of.
L379. Change part to aspect.
Fig. 8 caption. Delete values.
Fig. 9. Abscissa title is too small. Abscissa title is different in b. Use the same abscissa scale in all panels.
L395. Change like to as.
L403. Bimodal in terms of GF not size distribution?
L411. Delete 1st aerosol.
L417. Insert the before LH.
L418. Change high to greater. Insert the before MH twice.
L418-9. Change becomes larger as to is greater for larger.
L419. Particle plural. Delete size increases. Change It to This.
L420. Change increases as to is greater for larger. Particles plural. Delete size increases. Delete the twice. Parentheses around externally mixed.
L420-1. Move for comparison to beginning of sentence.
L421. Delete aerosols. Insert the before MH. Change increasing to larger.
L422. Delete the results in.
L423. Change It to This.

- L424. Insert although before Type. After aerosols insert had high GF their GF was. Delete had. Delete GF values. After than insert GF of.
- L427. Move mostly after to.
- L428. Insert a before quick.
- L429. Insert the before LH.
- L430. Change vs. to and. Delete 1st the. Reaction plural.
- L432. Insert hygroscopic before coating.
- L437. Insert the before LH.
- L441. Change different to various.
- L461. Insert the before MH.
- L465. Change It to This.
- L466. Diameters singular. Then insert particles.
- L467. Insert the more after and.
- L475. Insert only after explain.
- L482. Move the after on.
- L483. Delete the.
- L484. Insert an after by.
- L488. Was this for the entire campaign?
- L489. Delete the. Insert an before organic and before inorganic.
- L494. Change It to This. Insert that after and.
- L496. Insert a after such.
- L498. Change of to as.
- L501. Delete the. Change as to because.
- L504. Change is to are.
- L505. Change increases as to is greater for larger. Particle plural. Delete a decrease of. After HOA insert kappa is lower for larger particles whereas for OOA kappa is greater for larger particles. Then a period. Then substitute for the rest of this sentence, “ Greater OAA kappa is shown for larger particles.”
- L506. Change which to This (new sentence). Add s to support.
- L515. Insert the after of.
- L516. Composition plural.
- L517. Insert the after of.
- L519. Insert the after of.
- L520. Relationship plural.
- L523. Change highly to clearly.
- L526. Change as to because.
- L529. Insert the before spring.
- L530. Change the to these.
- L532. Delete season.

Kim, J.H., S.S. Yum, S. Shim, S.-C. Yoon, J.G. Hudson, J. Park, and S.-J. Lee, 2011: On aerosol hygroscopicity, cloud condensation nuclei (CCN) spectra and critical supersaturation measured at two remote islands of Korea between 2006 and 2009. *Atmos. Chem. Phys.*, **11**, 12627–12645, doi:10.5194/acp-11-12627-2011.