

## ***Interactive comment on “Modelling black carbon absorption of solar radiation: combining external and internal mixing assumptions” by Gabriele Curci et al.***

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This manuscript is generally well written, but there seems to be one important piece missing, which is related to BC particle structures. This study assumed spheres for externally mixed BC and core-shell coating structure for internally mixed BC. However, recent observations (e.g., China et al., 2015; Wang et al., 2017) have shown irregular fractal aggregates for externally mixed BC and various non-core-shell coating structures for internally mixed BC. Further modeling studies (e.g., Scarnato et al., 2013; He et al., 2015, 2016) have indicated a large variation in BC optical properties due to the observed complex fractal and coating structures. Thus, the assumptions in the current

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manuscript may lead to uncertainty in the calculations of BC optical properties. Thus, I suggest that the authors include these recent studies and add some discussions on this important issue.

### References

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