



Lidar for Advanced Classification and Retrieval of Aerosols (Second Edition)

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Message from the Guest Editors

This Special Issue is the second edition of the Special Issue: “Lidar for Advanced Classification and Retrieval of Aerosols”.

Aerosols affect the earth–atmosphere radiative system directly and indirectly. Reducing the uncertainty in direct aerosol radiative forcing is a necessary step in reconciling estimates of radiative forcing and the equilibrium climate sensitivity of the Earth, so that future predictions of surface temperature associated with climate change can be made with confidence. In this sense, lidar measurements have huge impacts on the increase in knowledge of aerosol optical properties’ vertical profiles but fail to provide accurate retrievals of aerosol microphysical properties. Only multiwavelength lidar measurements that combine independent backscattering and extinction measurements can provide a proxy for aerosol microphysical properties. On the other hand, passive ground-based radiometers and space polarimeters do provide accurate aerosol microphysical properties. The integration of these passive remote-sensing devices with lidar measurements can serve to exploit simple lidar instruments.





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