

***Interactive comment on “Case study of a multi-layer aerosol structure in the eastern Mediterranean observed with the airborne polarized lidar ALEX during a STAAARTE campaign (7 June 1997)” by F. Dulac and P. Chazette***

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I found this paper quite interesting. It shows how much effort and luck is required to obtain even semi-quantitative measurements of aerosol properties in the atmosphere. Measurements around the Mediterranean are of particular interest to me since I shall myself be doing Lidar work in the region (albeit at a longer wavelength) in the next few weeks.

At the core of this paper is the use of the satellite-derived total optical depth to provide

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closure of the Lidar inversion. Within its recognized limits, this seems to be sound. One might ask, however, why it was not possible to arrange the aircraft flights to coincide with the Meteosat image. In a developing convective situation, a lag of 3-4 h will always cause problems. What were the primary objectives when planning the flight? Was the Meteosat comparison an afterthought?

It is certainly helpful to have a feel for the proportion of the total optical depth which arises from the Saharan dust.

The conclusions are stronger than the discussion in pointing out that the maximum depolarization occurs close to the condensation point in the dusty layer, but the authors suggest no explanation. Is it possible that we are looking at the effects of multiple scattering?

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