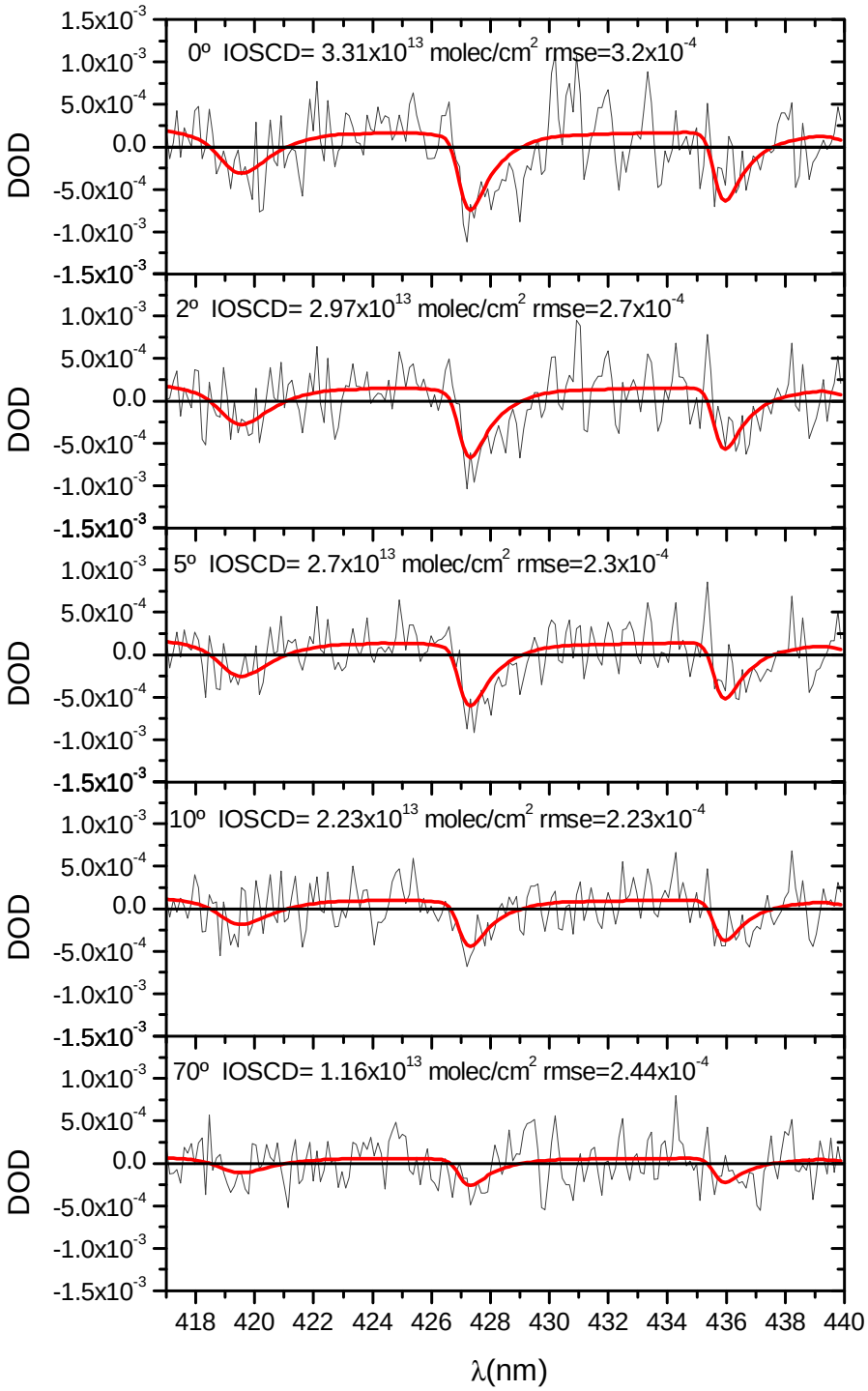

Figure 2. Detected IO absorption structure for a number of elevation angles on day 180 at aprox. SZA= 70º pm.

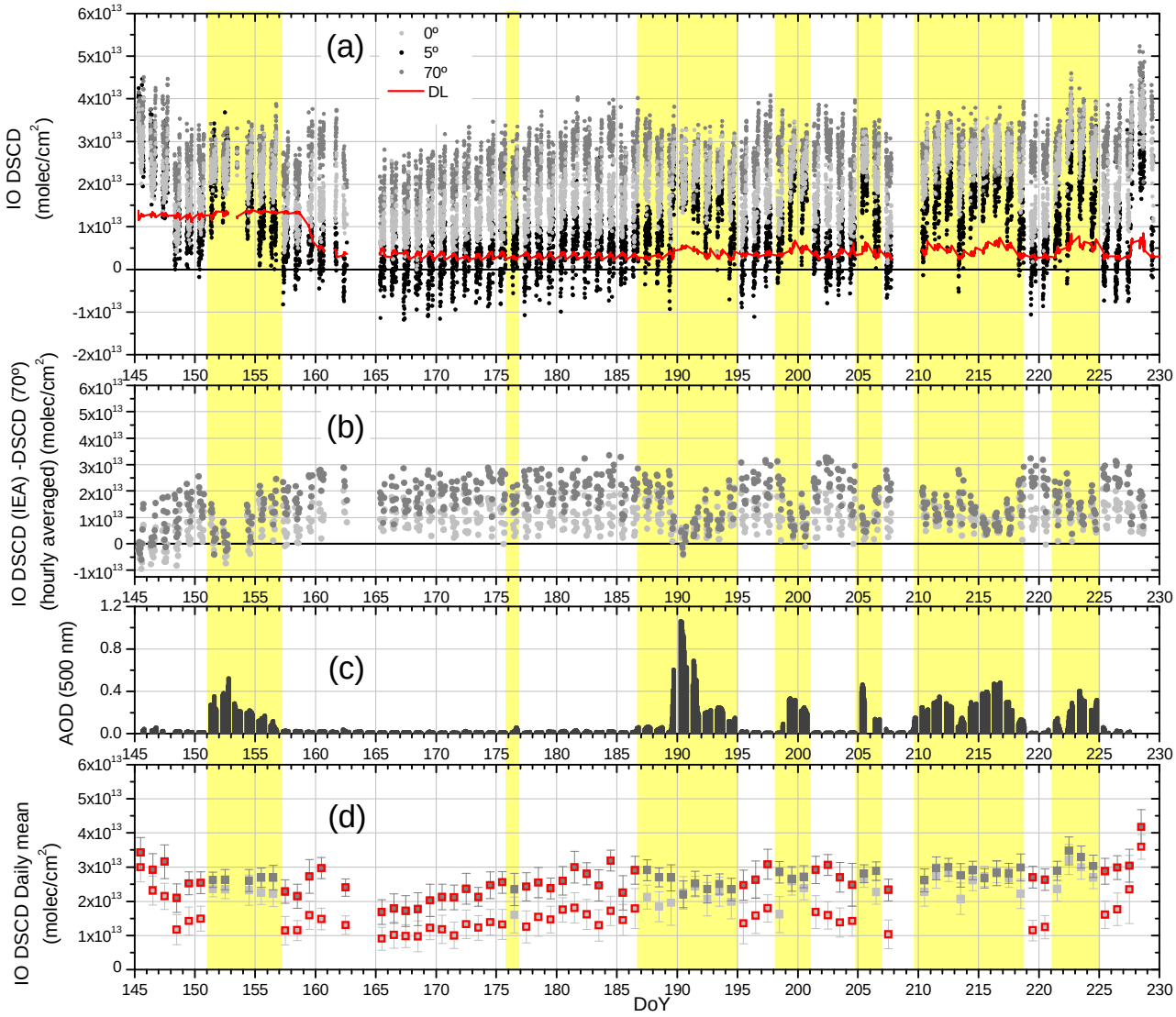

Figure 3. (a) IO DSCD for 0º, 5º and 70º instrument elevation angles elevation evaluated with a single reference taken on the morning of day 180 (June 29th) at 49º SZA. Red line is the most unfavourable detection limit between 0º and 5º IEAs. (b) 0º and 5º differences with respect to 70º for the same measurement cycle (see text). (c) Aerosol optical depths above the station. (d) Daily means and standard deviations. Red encircled squares are pristine days. Yellow shadowed areas corresponding to Saharan events.

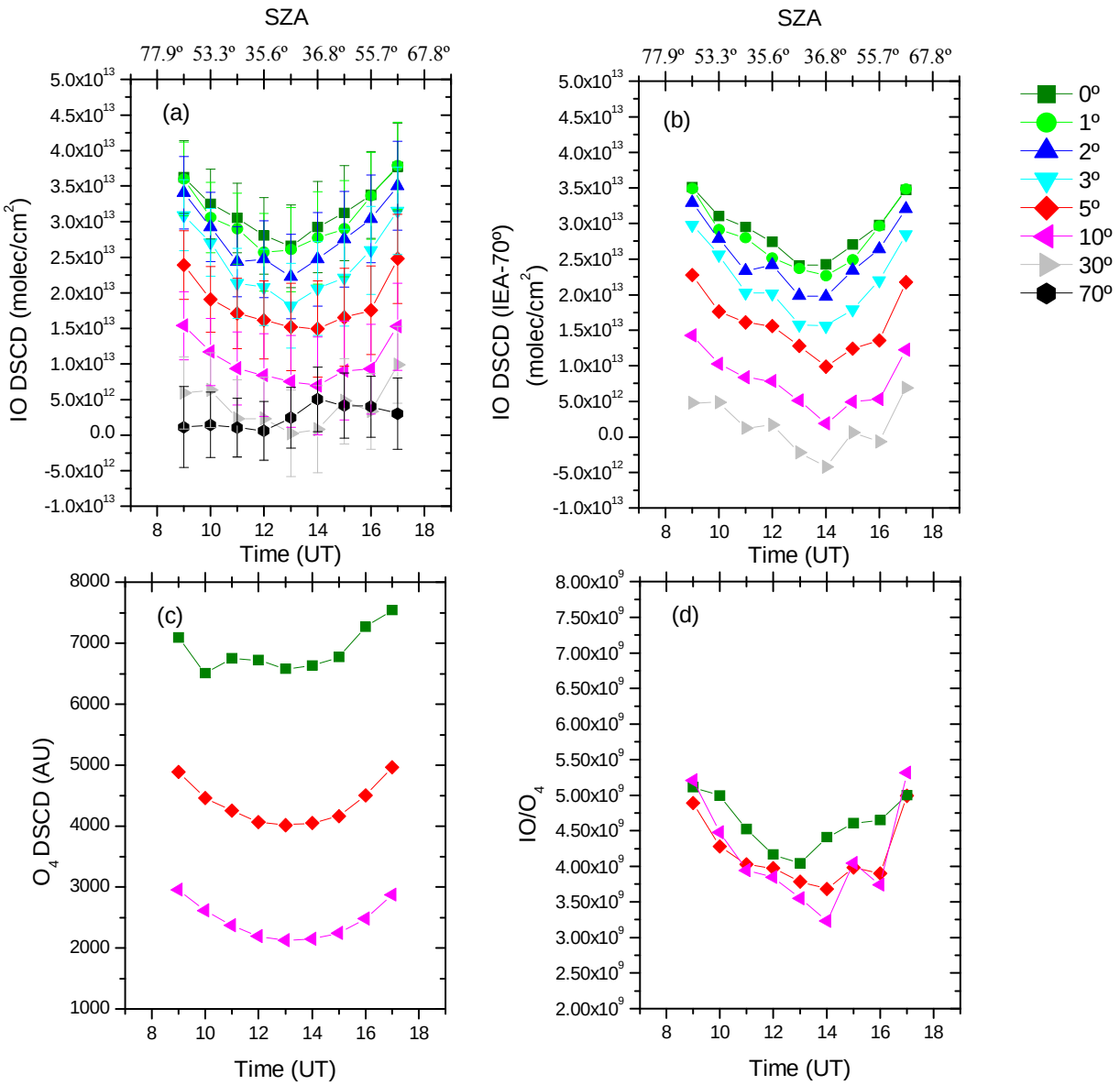

Figure 4. (a) Diurnal evolution of IO DSCD for elevation angles from 0º to 70º during day 278 (October 5th). (b) Differences for each elevation in (a) respect to elevation 70º. (c) O_4 diurnal variation on day 278 for a set of elevation angles. (d) IO/O_4 ratio for the same day.

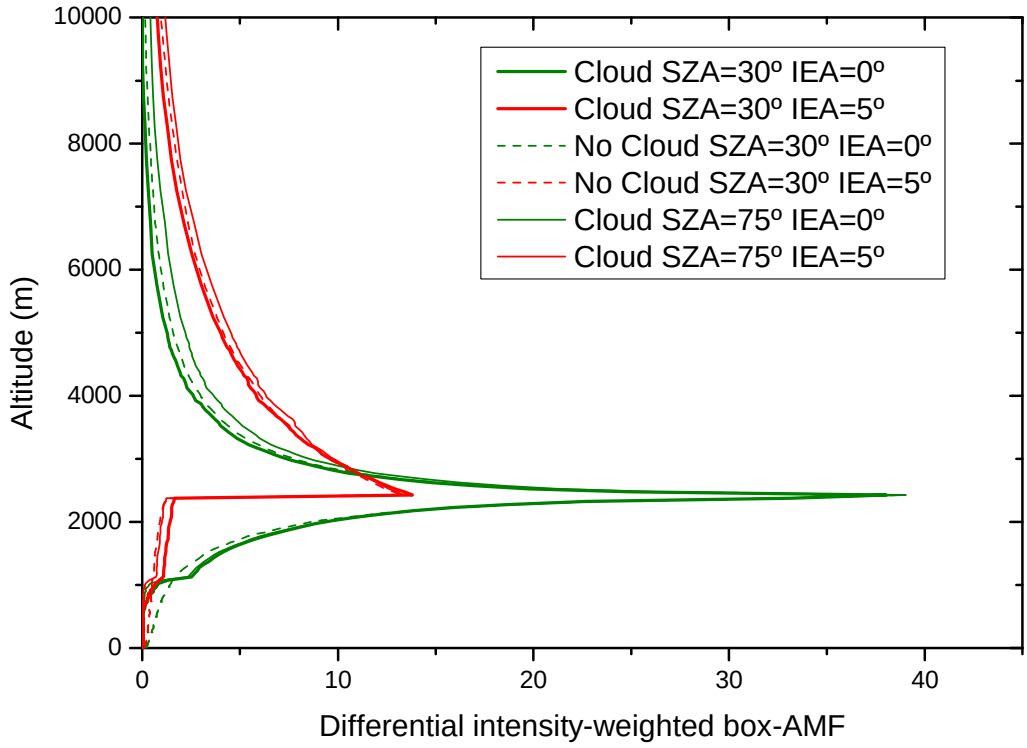

Figure 5. Differential intensity-weighted box-AMF for different conditions, elevation angles of observation and solar zenith angles.

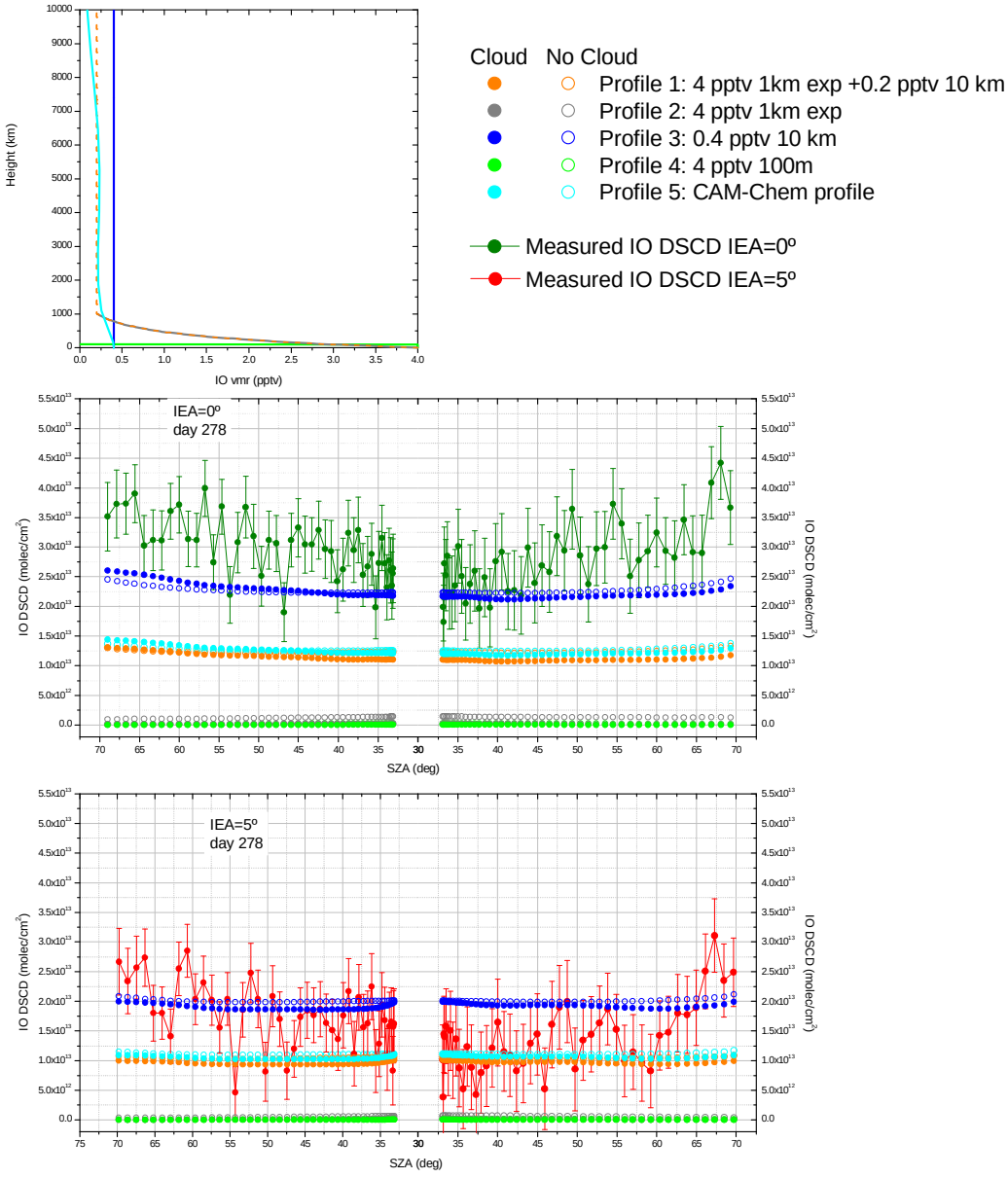

Figure 6. Top panel, different set of IO profiles used to simulate IO DSCD at the level of the observatory for IEA 0º and 5º. Middle panel, simulated IO DSCD using different profiles of IO and comparison with measurements for IEA=0º. Bottom panel, same for IEA=5º.

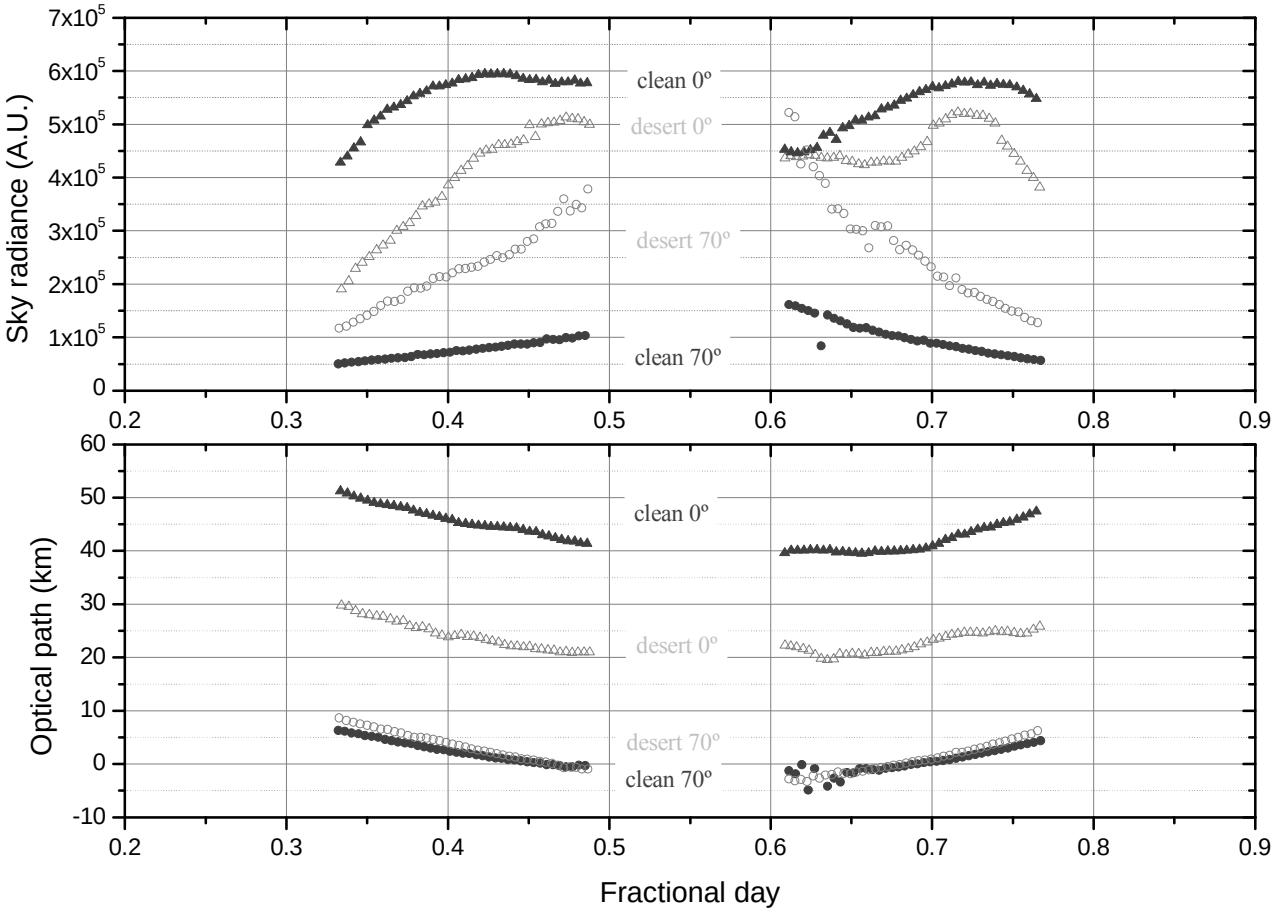

Figure 8. Upper panel, sky radiance at zenith (circles) and horizon (triangles) for a clean (black) and desert (grey) days. Bottom panel, differential optical path for the same cases as upper panel. Clean is day 181/2010 (June 30th). Desert is day 190/2010 (July 9th).