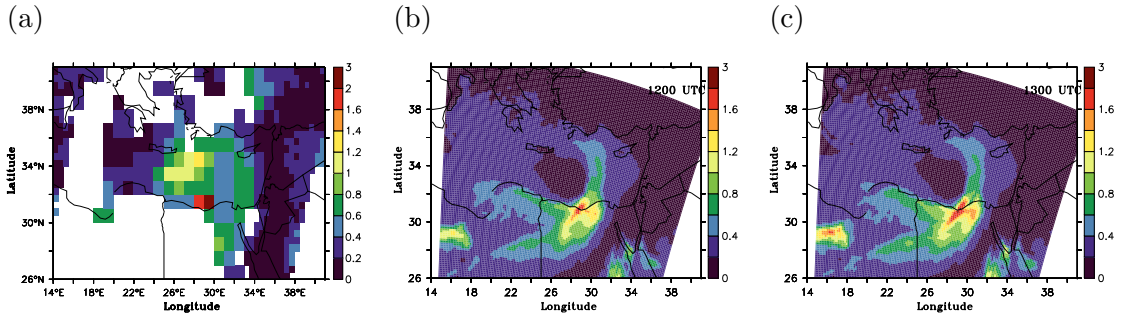


Figure 1: Aerosol optical depth on 25 September 2008 derived from MODIS (≈14-34°E) and MISR data (≈34 -40°E) (a) and simulated AOD at 550nm (16km domain, scenario τ_1) at 12:00 UTC (b) and 13:00 UTC (c).

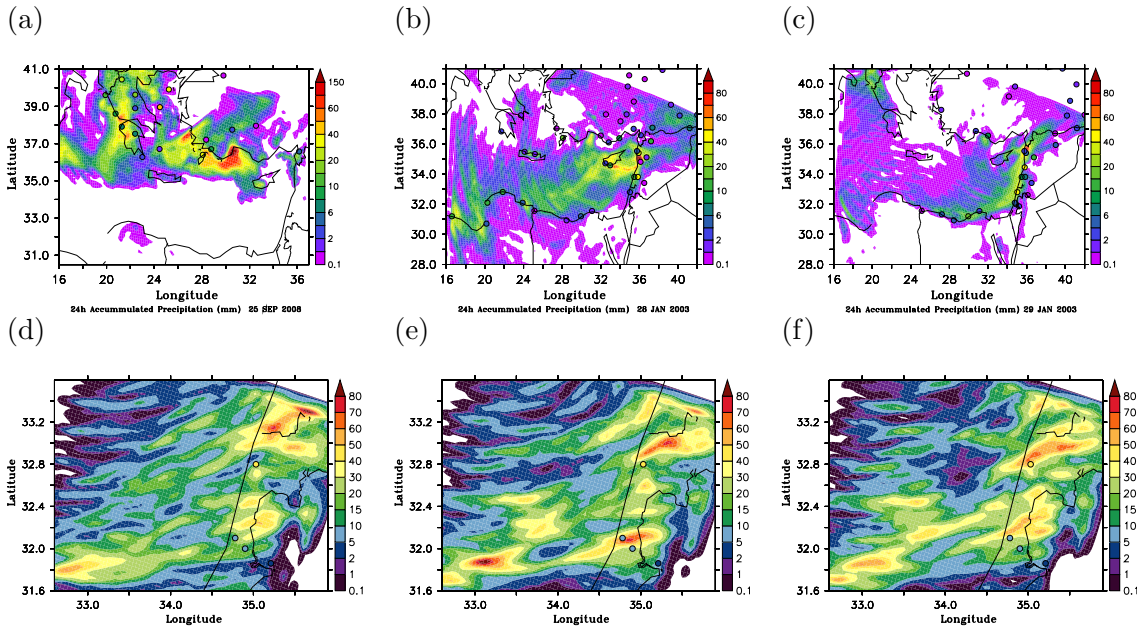


Figure 2: Simulated 24h accumulated precipitation on 25 September 2008 (a), 28 (b) and 29 (c) January 2003 for the 16km domain (scenario τ_1). Circles show rain gauge data. The lower row shows simulated 24h accumulated precipitation on 29 January for the 4km domain: (d) NOdust (e) τ_1 (f) τ_{48}.

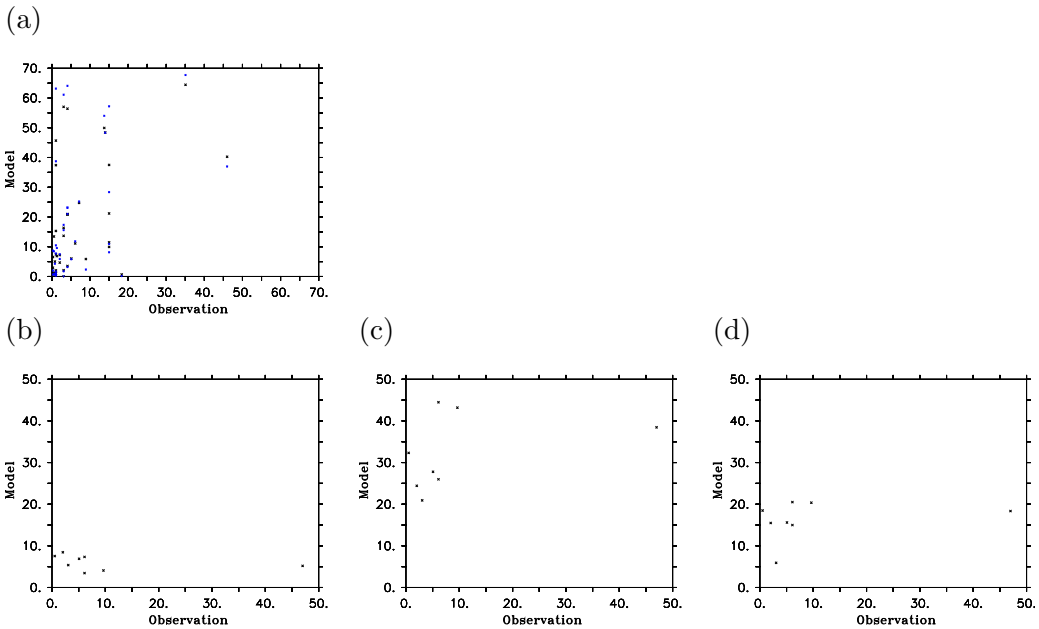


Figure 3: Scatter plot showing the correlation between simulated and observed (locations of stations showed in Fig. 2, supplement) 24h accumulated precipitation, 28 January 2003, for the 16km domain for scenario τ_1 (a). Plots in the lower panel show the correlation on 29 January 2003 for the 4km domain for scenarios (b) NOdust (c) τ_1 (d) τ_{48}. Note that the model setup was never configured to show maximum agreement with observations; in addition the quality of the observational data is unknown.

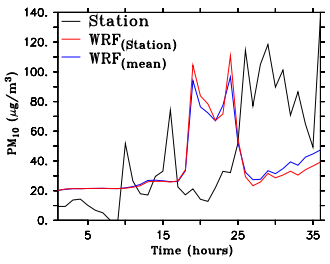


Figure 4: Comparison of PM10 concentrations retrieved from the EMEP station at Agia Marina (Cyprus) with simulated values for 25/26 September 2008. The red line shows WRF-chem values (4km domain, scenario τ_1) at the nearest grid point to the station and the blue line shows the mean value of all grid points surrounding the EMEP station.

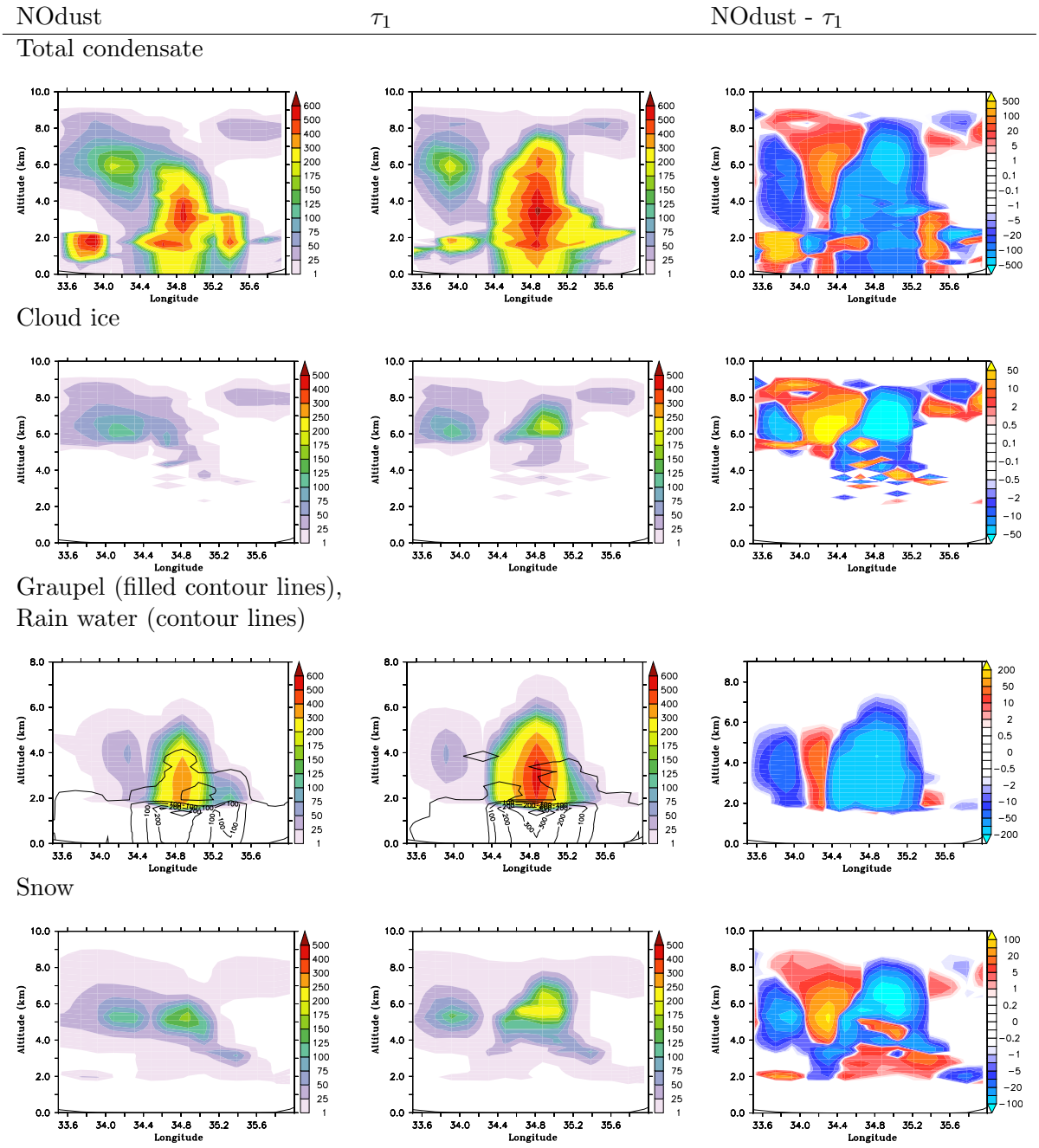


Figure 5: Condensed phase mixing ratios (mg/kg) along 35.00°N, 28 January 2003, 18:00 UTC

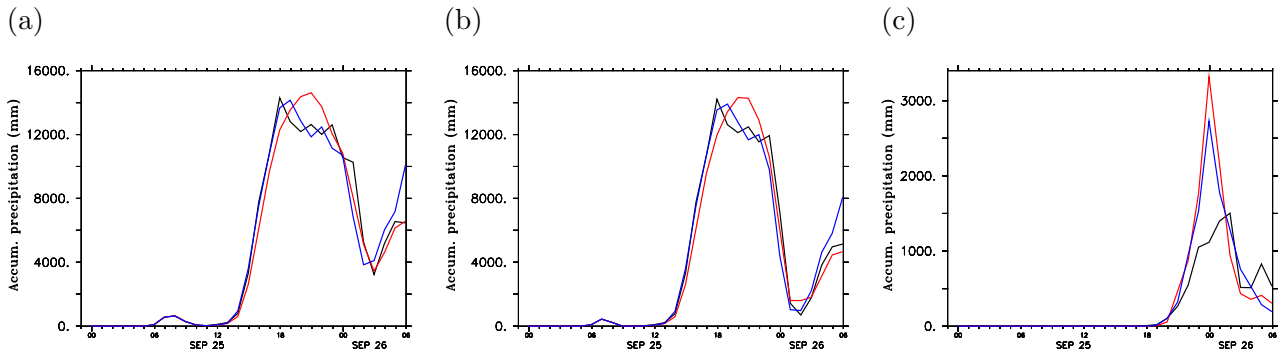


Figure 6: Domain integral precipitation, 25 and 26 September 2008 (a) entire domain (b) Turkish coast (31.0° - 35.0° E and 33.0° - 35.7° N) (c) Cyprus (28.5° - 33.0° E and 35.5° - 37.3° N). Black line: NOdust, red line: τ_1, blue line: τ_{48}

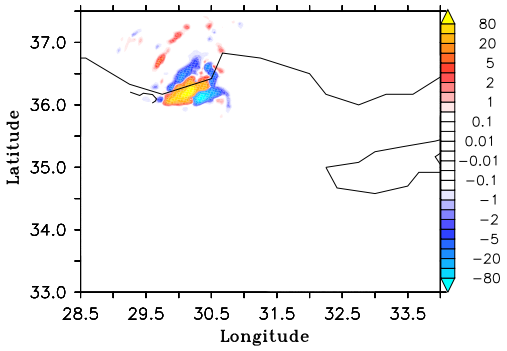
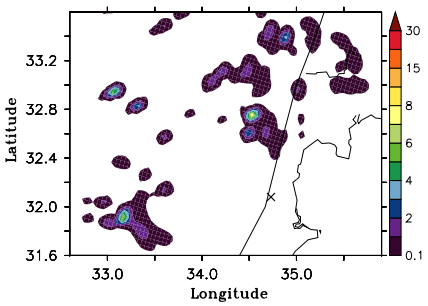
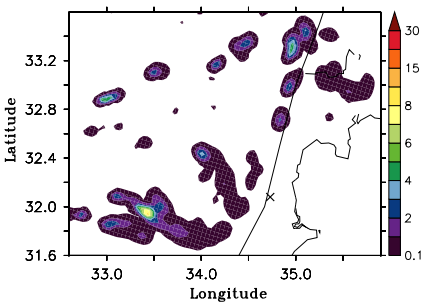


Figure 7: Difference in the hourly accumulated precipitation (15:00-16:00 UTC, 25 September 2008) between scenario NOdust and τ_1

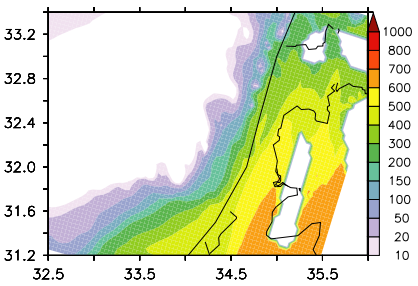
01:40-01:50 UTC



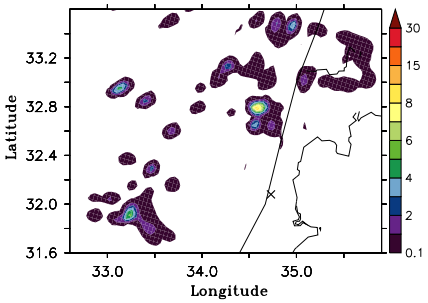
01:40-01:50 UTC



A)



01:50-02:00 UTC



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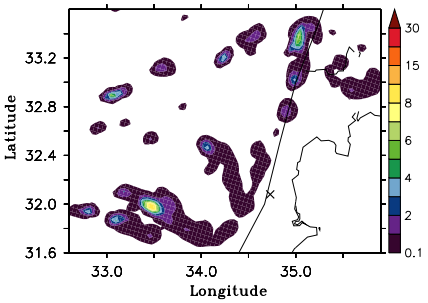
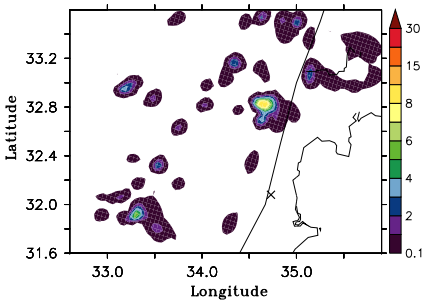


02:00-02:10 UTC



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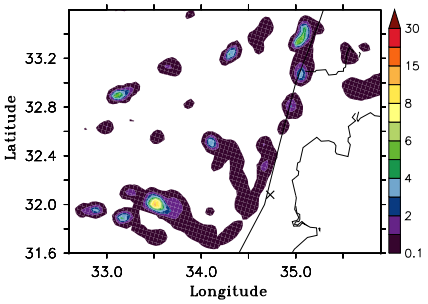
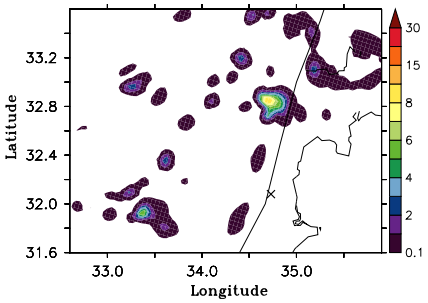


02:10-02:20 UTC



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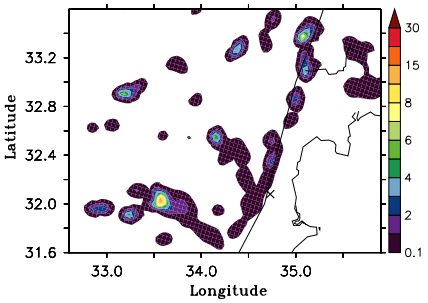

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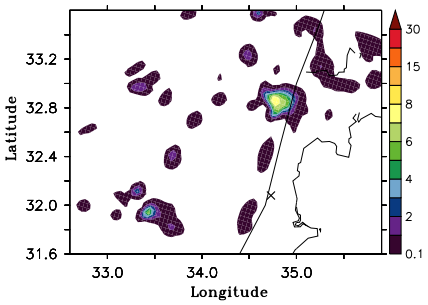

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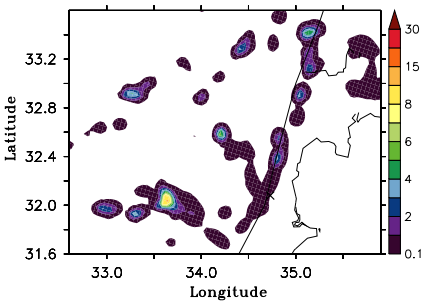

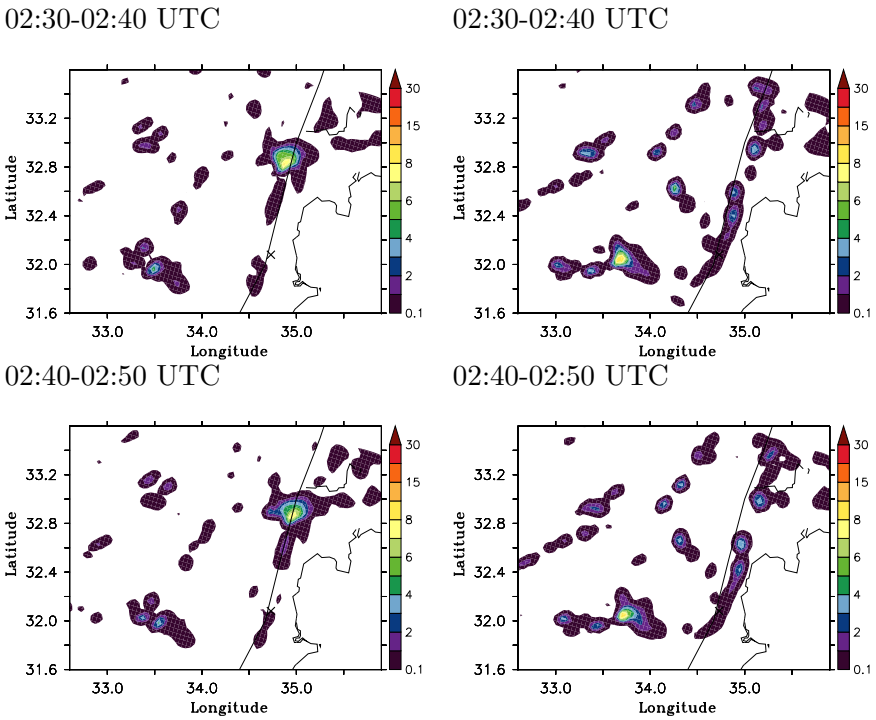

Figure 8: Ten minute accumulated precipitation (mm), 29 January 2003 for scenario NOdust (left column) and for scenario τ_1 (middle column). The cross marks the location of Tel Aviv. Panel (A) shows dust concentrations ($\mu g/\mathrm{m}^3$) at 500m altitude, 2:00 UTC, 29 January 2003 for scenario τ_1.