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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Observational evidence of temperature trends at two levels in the surface layer" *by* X. Lin et al.

Anonymous Referee #1

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The manuscript reports on analysis of near-surface lapse rate trend from 1997 to 2013 unsing high-quality two-height Oklahoma Mesonet observations. They show that the near-surface temperature lapse rate trend has significantly decreased, which indicates that temperatures in 9m height increased faster than 1.5m. The results provide the observational evidence of near-surface temperature changes with respect to height. Generally this manuscript is well writtern and illustrated. However, from global perspective, the warming is enhanced in Northern Hemisphere mid-high latitudes, especially for cold season (Enhanced cold-season warming in semi-arid regions, Atmospheric Chemistry and Physics, 12 (12), 2012). The authors may also investigate the seasonal deifferences of the lapse rate trend. In addition, the global warming hiatus starts around 1998, I just wonder if there are any implications by analysing the lapse rate

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trend for us to understand the warming hiatus?

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 24695, 2015.

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