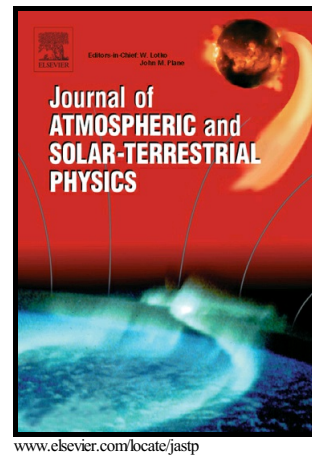


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Comparison of mesospheric winds from a high-altitude meteorological analysis system and meteor radar observations during the boreal winters of 2009–2010 and 2012–2013

J. McCormack^{1,*}, K. Hoppel², D. Kuhl², R. de Wit³, G. Stober⁴, P. Espy⁵, N. Baker⁶, P. Brown⁷, D. Fritts⁸, C. Jacobi⁹, D. Janches³, N. Mitchell¹⁰, B. Ruston⁶, S. Swadley⁶, K. Viner⁶, T. Whitcomb⁶, R. Hibbins⁵

Abstract

We present a study of horizontal winds in the mesosphere and lower thermosphere (MLT) during the boreal winters of 2009–2010 and 2012–2013 produced with a new high-altitude numerical weather prediction (NWP) system. This system is based on a modified version of the Navy Global Environmental Model (NAVGEN) with an extended vertical domain up to ~ 116 km altitude coupled with a hybrid four-dimensional variational (4DVAR) data assimilation system that assimilates both standard operational meteorological observations in the troposphere and satellite-based observations of temperature, ozone and water vapor in the stratosphere and mesosphere. NAVGEN-

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