



Tracing the Inter-hemispheric Coupling during Polar Summer Periods of 2002-2010 Using TIMED/SABER Measurements

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It has been found that for more than one polar summer season between 2002-2010, the northern polar mesospheric region near and above the mesospheric maximum was warmer than normal. The strongest warming effect of this type was observed to occur during northern summer 2002. Theoretical studies have implied that these “anomalies” were preceded by unusual dynamical processes occurring in the southern hemisphere. We have analyzed temperature distributions measured by the SABER limb scanning infrared radiometer aboard the NASA TIMED satellite between 2002-2010 at altitudes from 15 to 110 km and for latitudes between 83°S to 83°N. We describe the approach to trace the inter-hemispheric temperature correlations and to identify the global features that were unique for the “anomalous” northern polar summers.