



Diagnostic Study of Serious High Temperature over South China in 2003 Summer

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Serious high temperature, with the strongest magnitude and longest duration in the historical record, occurred over South China during the summer of 2003. Using the NCEP/NCAR reanalysis data, the examination of the warming process shows that the radiative heating in clear sky and large-scale subsidence is the dominant mechanism for the temperature increase. This severe hot climate was directly affected by the extremely intensity and westward extension of subtropical high in the western Pacific, which was associated with the normal sea surface temperature in the Pacific-Indian Ocean, cross equatorial anomalous northerly over the Pacific, effect of stratosphere, and the background state of global warming.