On the Seasonal and Spatial Dependence of Extreme Warm Days in Antarctica

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The spatial distribution of trends in temperature extremes over Antarctica remains largely unknown. Here we investigate the seasonal and spatial characteristics of extreme warm occurrence across Antarctica. The Antarctic inland areas show significant positive trends in the number of extreme warm days in austral spring and summer. The trends in the seasonal mean of daily maximum temperature show strong coherence with the trends in extreme warm occurrences. In addition, the long-term longwave radiation, water vapor flux and regional atmospheric circulation changes are closely connected to the trends of extreme warm days in all seasons outside of summer; the summer longwave radiation and interior wind trends show little coherence with warm extreme trends, indicating other processes at play driving extreme warm days in summer.