

Study on intraseasonal variability of maximum and minimum temperature in Southwestern South America

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Weather and climate forecasts improve with the increasing capability of dynamic and probability models to identify high- and low-risk situations. Therefore, an understanding of the processes that are involved in identifying high-risk situations leads the user to place greater value on the weather information available. The main goal of this work is to obtain a climate variability analysis, particularly at the intraseasonal scale, in daily maximum and minimum temperature series of south-eastern South America from the end of the nineteenth century until the beginning of the twenty-first century. This analysis shows that there is a definite and coherent signal in the intraseasonal maximum and minimum temperatures. The most noticeable signal is observed during the winter months. For the maximum temperature, the frequency of the intraseasonal signal is more complex and in some stations displays a bimodal distribution. A definite pattern is observed that describes a coherent variability between 30 and 60 days throughout the entire region. This pattern allows a classification of the variability in the region and the ability to adjust temperature forecasting models on a daily scale.