

## CORRESPONDENCE

**Comments on "Observed Trends in Indices of Daily Temperature Extremes in South America 1960–2000"**

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**1. Introduction**

Vincent et al. (2005) employed the nonparametric linear regression method of Sen (1968) to estimate statistically significant linear regional trends ( $\alpha = 5\%$ ) in several indices of daily temperature extremes over the period 1960–2000 for eight southern countries of South America. While the authors found no statistically significant linear trends in the percentage of cold days and warm days, they reported a statistically significant 5.5% decrease and 5.6% increase in the percentage of cold nights and warm nights, respectively. They concluded that the regional warming over the continent was therefore driven by nighttime warming and noted that this finding generally agreed with what has been observed in many other parts of the world.

We critically examined these findings because of the apparent failure by the authors to properly assess the data for the presence of changepoints and monotonic trends prior to the application of the Sen method for estimating linear slopes. The Sen method, as the authors correctly pointed out, is based on Kendall's rank correlation, but as McCuen (2003) advised, is designed to detect a monotonically increasing or decreasing trend in a data series rather than an abrupt change.

It is of course well known that a statistically significant result in a linear regression analysis does not necessarily imply that the linear regression model is valid. For example, Wilks (1995) cautioned against this common statistical pitfall and advised as follows: "It is not sufficient to blindly feed data to a computer regression package and

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