Is Florida getting warmer?

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1 Introduction

This investigation makes use of temperature data from Key West (Florida, USA) over a period of 100 years from 1901 to 2000, to determine if temperature has increased significantly within this period.

2 Methods

The correlation between years and temperatures of Florida was found using Spearman's rank correlation coefficient (rho). To see if the temperature of Florida has increased, a permutation anaylsis was used, where the rho value calculated was compared to that of random samples. The year-temperatures pairs for the original Florida dataset were randomised 10,000 times, and the corresponding rho values compared with that of the original Florida dataset.

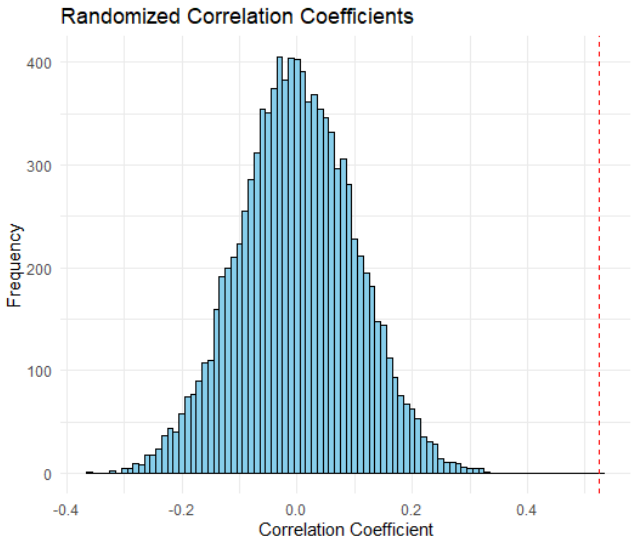

Figure 1: The distribution of rho values from 10,000 random repeats.

3 Results & Interpretation

The Spearman's rank correlation coefficient (rho) was 0.526 for the correlation between years and temperatures of Florida. This was found to be higher than 100% of the 10,000 randomly generated rho values, corresponding to a P-value of 0. This suggests that the average temperature of Florida has increased significantly over the period from 1901 to 2000.