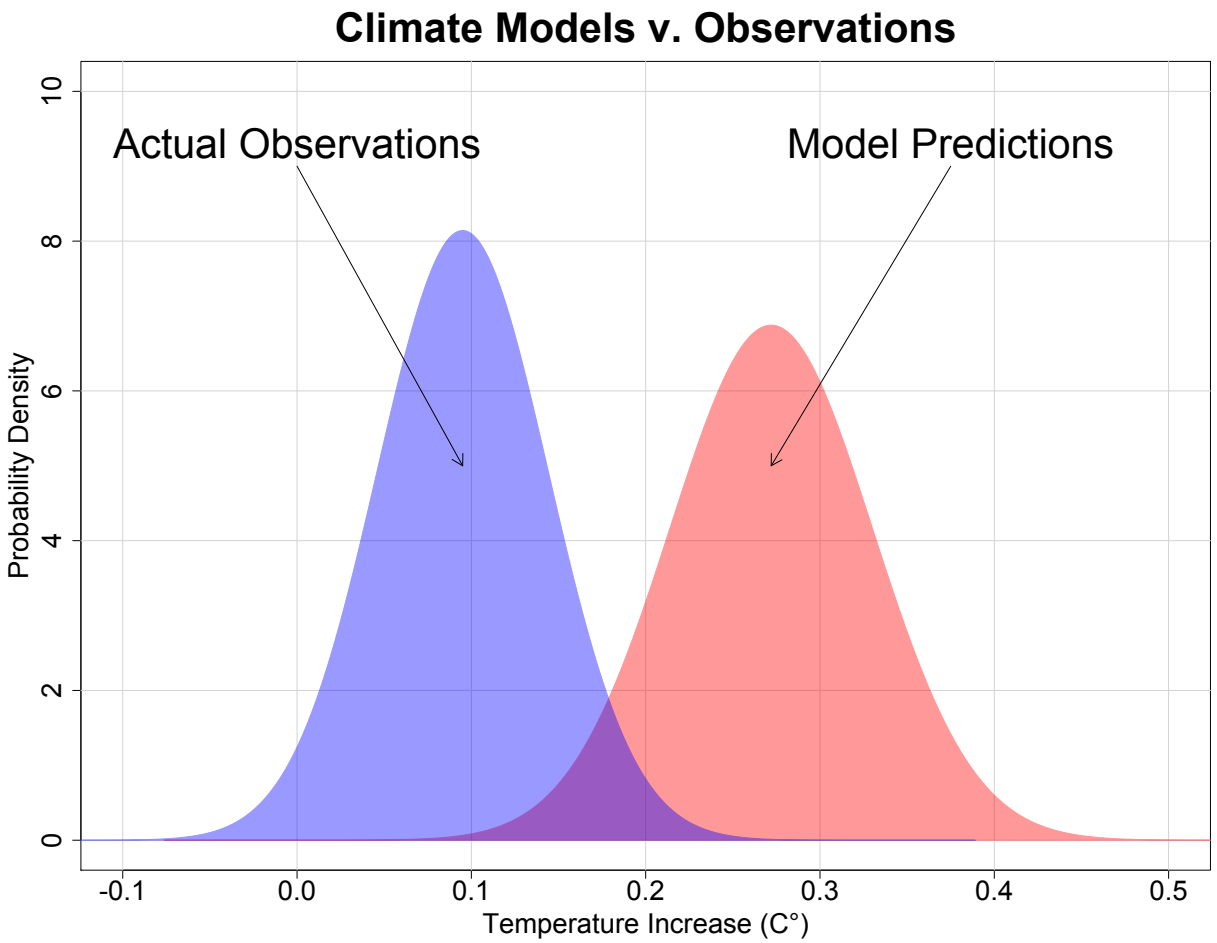
Climate models versus observations



These are the probability distributions of two sets of data — climate model predictions (pink) and actual temperature measurements (blue). The curves show the probability density of a given temperature value. The x axis is degrees of temperature increase in centigrade. The y axis is the probability of getting that value. Left is cooler, right is hotter.

For example, the most probable value (6.9% of the time) of the climate models is around +0.272 C°, while the most probable value (8.1% of the time) from an actual measurement is +0.095 C°.

A model run will be warmer than actual data more than 99.5% of the time.

The model data is the result of 102 runs of the models included in the CMIP5* set. The actual data came from a five-satellite series.

Model runs: mean=0.272, sd=0.058
Actual data: mean=0.095, sd=0.049

* Coupled Model Intercomparison Project, phase 5