



Global warming: Is climate's natural variability to blame?

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What is to “blame” for the 20th century global warming? Are the anthropogenic greenhouse gas emissions, or, it could be climate’s multidecadal variability? Here we explore and quantify the potential of climate’s natural variations to reproduce the observed increasing 20th century trend in the global mean annual temperature under various temporal dynamics. Specifically, we focus on long-term-persistence (LTP) dynamics, which have the strongest potential to create multidecadal, or, even centennial “local” trends. We perform an exhaustive analysis by investigating the whole range of the possible LTP scenarios and we quantify based on intensive Monte Carlo simulations the exceedance probabilities of the observed 20th century trend.