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The long view: Causes of climate change over the instrumental era

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This talk presents an overview of results of the project Transition into the Anthropocene. It will discuss contributions of external forcing to the evolution of global scale temperature in the 19th and 20th century, including the early 20th century, and discuss periods where the forced response explains only aspects of the anomalies. Examples are the cold conditions early in the 20th century and the peak 20th century warming, particularly in some regions. It will also show evidence for decadal variability in the frequency of heat waves both in North America and Europe. Other climate variables such as precipitation and sea ice change will be briefly referred to.