

Robert Henson The Rough Guide to Climate Change – The Symptoms, The Science, The Solutions, Rough Guides, London and New Delhi, 2011 – 3

Part 1: The Basics – Global warming in a nutshell, Couldn't the changes have natural causes?, pages 8-10

The IPCC has tackled the query whether global warming has a natural cause. Scientists have used computer models to simulate global warming. There are two types of work. Detection and Attribution studies.

Detection research attempts to establish that an unusual change in climate has taken place. Attribution studies try to determine the likelihood that human activities caused it. This means to compare it with what you'd expect from non-greenhouse gas causes.

Over the past few decades most surface temperatures warmed near the poles and at night. This is consistent with computer projections that incorporate rises in greenhouse gases. The patterns agree less well with warming produced by other causes. The US National Centre for Atmospheric Research examined five different factors. Volcanoes, sulphate aerosol pollution, solar activity, greenhouse gases, and ozone depletion. The Mount Pinatubo eruption (1991) helped cool the climate for several years. Sulphate pollution could have produced the mid century cool down. Small solar output ups and downs contributed to early century warming and later cooling. The model can't reproduce warming since the 1970s unless it includes greenhouse gases.

(summarised by Paul Hendler)