The researchers say a possible explanation for this warming bias may lie in a "multiplier effect," whereby a modest degree of warming -- for instance from volcanoes releasing carbon dioxide into the atmosphere -- naturally speeds up certain biological and chemical processes that enhance these fluctuations, leading, on average, to still more warming.

Because the carbon cycle, which is a key driver of long-term climate fluctuations, is itself composed of such processes, increases in temperature may lead to larger fluctuations, biasing the system towards extreme warming events.