US climate scientists have recorded a significant rise in the concentration of carbon dioxide in the atmosphere, pushing it to a new record level.

BBC News has learned the latest data shows CO2 levels now stand at 381 parts per million (ppm) - 100ppm above the pre-industrial average.

The research indicates that 2005 saw one of the largest increases on record - a rise of 2.6ppm.

The figures are seen as a benchmark for climate scientists around the globe.

The chief carbon dioxide analyst for the US National Oceanic and Atmospheric Administration (Noaa) says the latest data
confirms a worrying trend that recent years have, on average, recorded double the rate of increase from just 30 years ago.

"Mankind is changing the climate"
Professor Sir David King,
UK chief scientific adviser

"We don't see any sign of a decrease; in fact, we're seeing the opposite, the rate of increase is accelerating," Dr Pieter Tans told the BBC.

The precise level of carbon dioxide in the atmosphere is of global concern because climate scientists fear certain thresholds may be "tipping points" that trigger sudden changes.

The UK government's chief scientific adviser, Professor Sir David King, said the new data highlighted the importance of taking urgent action to limit carbon emissions.

"Today we're over 380 ppm," he said. "That's higher than we've been for over a million years, possibly 30 million years. Mankind is changing the climate".