

Father of chaos theory explains why it is impossible to predict weather & climate beyond 3 weeks

An article published today in the *Bulletin of the American Meteorological Society* may be the last interview with the father of chaos theory, MIT professor Dr. Edward Lorenz, and has essential implications for climate modelling. In the 2007 interview, Dr. Lorenz confirms that chaos theory proves that weather and climate cannot be predicted beyond the very short term [about 3 weeks], and that even with today's state-of-the-art observing systems and models, weather [or climate] still cannot be predicted even 2 weeks in advance.

Dr. Lorenz notes that although other fields that deal with complex, non-linear systems have accepted the implications of chaos theory, some meteorologists and climatologists remain reluctant to accept the implications of chaos theory, namely that long-term climate forecasting is impossible.

According to chaos theory, all the current 'initial' conditions throughout the atmosphere must be known precisely to predict what the atmosphere will be doing in the distant future. In addition, one must know all the current conditions throughout the oceans as well, since the oceans control the atmosphere. "In view of the inevitable inaccuracy and incompleteness of weather observations, precise very-long-range forecasting would seem to be non-existent," Lorenz concluded.

So even if the molecules in the air all interacted non-randomly, in a totally cause-and-effect (deterministic) manner, you still couldn't predict with certainty what they would do or what the weather would be."

Chaos theory also debunks the claim of some climatologists that although models cannot predict short-term climate variations such as the current 20 year "pause," they can still be used for long-term projections. Chaos theory instead proves that uncertainty of projections increases exponentially with time, and therefore, long-term climate model projections such as throughout the IPCC AR5 report are in fact impossible to rely upon