

## Review of the Study of the Mechanism of Global Weather Fluctuation

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[Purpose] The scientific forefront of the global weather fluctuation study is reviewed. The former study was closed inside the Earth (the atmosphere and ocean; the solar energy is the only source of external force). However, the new theory of Svensmark, arguing that a force from outside of the solar system (galactic cosmic ray) decides the global weather, has solved previous contradictions and opened a way to the new trend of study. I review the forefront and clearly indicate the next problem.

[Method] The history of research is reviewed based on philology.

[Result] 1st period: The period of induction based on empirical observation: Empirical data first, and after A.D. 1600 in particular, paleoclimatological research works..

2nd period: The period led by theoretical calculation based on the observation by artificial satellites and the physics. It was revealed that global climate change cannot absolutely be explained by the fluctuation level of the solar activity of the past XX years, and the sun origin opinion retreated, and comparative planetological new observations (Venus, Martian atmospheric composition and greenhouse effect) asked the cause from a fluctuation of greenhouse gases, in particular carbon dioxide. The 4th report of IPCC pointed out that the 21st century faces global warming by the speed which has no examples in the past, and also pointed out that its cause was in discharge of artificial CO<sub>2</sub>.

3rd period: The idea that the cause of the time: global warming of an interdisciplinary match is fluctuation of the amount of cloud influenced by the interaction of the cosmic rays with the sun included the power of the sun out of a system, and was taken out of the astrophysics scholarly viewpoint, and the opinion which is as a result of the global warming appeared for increase of CO<sub>2</sub> of the least amount, and the new theory which can explain the 1st stage empirical observational evidence overall appeared.

[Discussion] Argument faces concentration. Next, it's promotion of international joint research for a study of the (1) process, a satellite observation of (2) observational technique and explication of a fluctuation principle in the (3) solar system that I should accomplish. The forefront of a fluctuation principle study in the solar system is understood from a summary of a front of a study of a fluctuation principle in the solar system and the old climatology-like evidence carved in the change of the links, the interaction of the geomagnetic field and the heliotropic wind, the cosmic rays and the cloud formation of a magnetic pole and also the annual ring of a tree in the sun surface above all. Whether the 21st century is global warming based on those, or, it becomes colder, one it faces or the forefront is argued.