The Paradox of Earth’s Climate

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Short Communication

The sun has continuously increased in size and the quantity of energy it emits over the past 4.5 BY; yet the Earth’s surface temperature has decreased over this same period of time, especially the past 65 MY. The Sun is the primary source of energy for the Earth. The paradox is: "Why if the primary source of energy (the Sun) is increasing, is the surface temperature of the Earth decreasing?" The primary factors of the atmosphere that affect the absorption of energy from the Sun are its pressure and composition. The temperature charts, generated by various methods, all show a steady cooling of the Earth, especially in the past 65 MY. The Earth’s atmosphere especially the troposphere, is a dissipative system (dissipating energy), which may be described by the equations of the mathematical physics.

Therefore, the Earth’s atmosphere can be organized and described by its physical fields and formation using the process parameters, defined by stable thermodynamic structures, in space and time. Thus, it is possible to study only those physical parameters, e.g. (1) mass of the atmosphere, (2) total pressure, (3) compositions, (4) heat capacity, (5) average value if the solar radiation hitting the Earth, as well as the energy absorbed reflected by the Earth. Understanding these parameters, the climatic description or a first approximation climate model can be constructed for the Earth. The troposphere is the portion of Earth’s atmosphere where weather occurs. The troposphere can be considered as a self-contained portion of the atmosphere within which is transferred (adiabatic). Within this portion of the atmosphere, about 70% of all energy transfer occurs by air-mass conduction. Radiation accounts for only 17% of energy transfer. An adiabatic equation can be utilized to predict the temperature of the atmosphere at various elevations based upon the atmospheric pressure and composition [1,2].

The thermodynamic model of the troposphere developed by the authors shows that increasing the concentration of carbon dioxide in Earth’s surface temperature. This fact invalidates the concept that increasing anthropogenic carbon dioxide will result in the global warming of the Earth [3].

References