Airo International Research Journal
Volume XIII, ISSN: 2320-3714
November, 2017

UGC Approval Number 63012

EFFECTS OF CLIMATE CHANGE: INCREASING UNDERSTANDING

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Abstract

The aim of this research is to present the problems of climate change. This researchsuggests it also aims to clarify the scientific basis for climate change and possible effect of changing climate.Natural climate change, climatic forces, predicting emissions, climate change and survival from the forest industry hazardous climate change has been introduced and discussed to explain them efficiency and impact on environmental and economic prospects domestically and internationally.As an application of climate impacts changes on forests, experimental part in the laboratory is about the effect of wind humidity on hand sheet paper properties.

Two different research methods were used to carry out this research work in different evaluations. It contains information research has been collected by researching and studying existing literature and other sources on related topics with supervision and guidelines from the instructor.The second method was used to interview team experts' impact of climate change on forests.

Key Words: Climate, efficiency, environmental, experimental, laboratory & Humidity

Climate and Geophysics

Our environmental physics research includes atmospheric, oceanographic and solid-earth systems. We address important questions related to climate, geometric and sustainable energy.In New Zealand, earthquakes and volcanic hazards threaten the spread of two tectonic plates. Additionally, our unique natural ecosystem and large agricultural areas are sensitive to climate variations.We address both local issues as well as their global implications. We work closely with faculty colleagues on projects such as energy and geohazards, remote sensing for seafloor gas and hydrates, New Zealand tectonic facilities, and close climate exploration.

Atmosphere

Physics is at the core of Earth science. It is necessary to understand the deep structure of the Earth and the natural phenomena affecting the Earth's surface, such as earthquakes and volcanic eruptions. These topics are discussed among other aspects of Earth's physics, "complex systems". Physics provides a basis for dynamic interactions between the atmosphere and the oceans, and for the study of short-term weather and long-term climatechange. This understanding is essential for the environment: to address problems such as urban air pollution and lake acidification, and to deal with natural hazards such as floods and hurricanes.

Most physics is the study of energy and its transformation, and energy is at the heart of important environmental issues. Climate takes shape how the sun's energy affects the motion of the atmosphere and oceans and how they distribute energy around the world.The need for energy production is the cause of the greatest impact on humans on the environment.To understand the complexities of the environment and to address problems effectively, the underlying physics must be combined with chemistry, geology, atmospheric and oceanography, and biology.Ocean-atmosphere systems, environmental monitoring and improvement, and energy production and the environment are three areas where understanding of basic physics has played a central role and where it is important for further progress.

OCEAN-ATMOSPHERE SYSTEM

In the coming years, continued improvement in our understanding of the remarkable concentration of energy involved in severe weather patterns will give much higher predictive capacity and earlier warning than is available in the future.This progress will come from a combination of theoretical modeling, computer simulation and direct measurement, in which each instrument will be based on physics and methods of physics by each of the researchers.By the 1980s, atmospheric science had focused on the theory and practice of weather forecasting, covering 6 to 10 days. Weather prediction was largely based on the understanding of prevailing instability, mid-latitude events, as a result of the analysis of the Neo-Stokes fluid dynamic equations.Meanwhile, in cases such as the circulation of the Gulf Stream and the ocean valleys, large-scale thrust was trying to understand the physical and large-scale processes responsible for heat transport. At that level of understanding, it was thought that the variability in the oceans and the variability in the atmosphere are relatively independent of each other at shorter time intervals than decades.

Recently, it has been realized that the oceans and the atmosphere are interconnected at very short time intervals. This realization stems from a developing understanding of the El Niño phenomenon in the Pacific Ocean.A series of positive and negative reactions between the ocean and the atmosphere create this phenomenon, a grand-scale oscillation that accounts for the instability of the climate system in the Pacific.An understanding of this phenomenon, which rests on the dynamics of the combined fluid of the ocean and atmosphere, suggests a prediction in the climate system.The prediction is demonstrated on an El-Niño-coupled ocean time scale - atmospheric instability, not only on weather time scales of 6 to 10 days, but also at intervals of 6 months to 1 or 2 years.Since pioneering work on the El Niño phenomenon, it has been shown that the planet's great monsoon systems also link the events of the ocean atmosphere at similar time scales, so that their evolution depends on the same combined dynamics and thermodynamics of the atmosphere.

Environmental Monitoring and Improvement

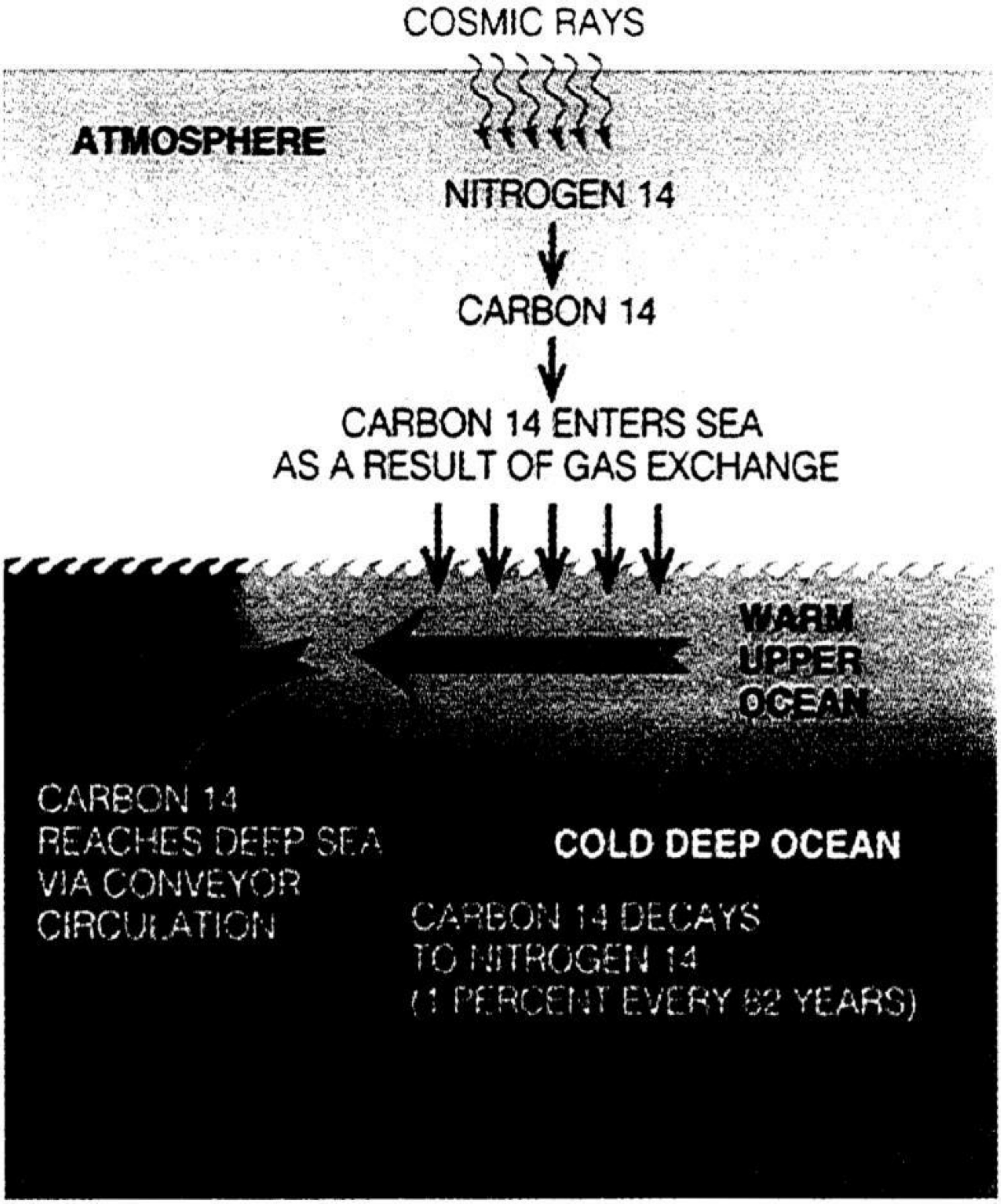
A large part of the environmental challenges facing humans are problems requiring better management of human activity to reduce its fatal effects on natural systems. Such problems arise with increasing frequency due to larger and more affluent human populations.But our deep understanding and improved capability of the affected systems can address them with greater success. To explore the impact of human. These types of problems fall on all scales: from the room of a person whose air is inferior to radon or organic pollutants, subject to the creation of pollutants in the urban air, especially in the weather, up to the global stratosphere, whose chemical composition is changing. Chlorofluorocarbons and nitrogen oxides.

The discovery of the destruction of stratospheric ozone by chlorofluorocarbons is a classic example of the use of physics to understand how humans transform a natural system. Solving the details of this problem involves heterogeneous reactions and the chemistry of fluid and radiation transport.Global warming is partly a result of changing the carbon cycle on the planet by the burning of fossil fuels. The increase of carbon dioxide promotes the development of other greenhouse gases by changes in the global hydrology cycle.The understanding of global warming and related climate change is based on several topics. Geological fluid dynamics is necessary to understand the structure of the basic climate system within which these climate changes occur. At the same time, the chemical and biochemical cycles are active participants in the dynamics and thermodynamics of the climate system.

Effective management of human relationships with an ecosystem requires simultaneous progress on several fronts: understanding of the system in the absence of human impact; Understanding of how to change the human impact system; And an understanding of available measures to reduce this effect, such as substituting one form of energy production for another.Over the last few decades, much progress has been made in understanding the functioning of environmental systems sensitive to human impacts, from the thermal behavior of lakes to the chemistry of the stratosphere. Many of these systems are now well understood through a combination of measurement, modeling, simulation, and theory.

Environmental Monitoring

Accelerator mass spectrometry (AMS) is an important tool for environmental measurement. AMS uses atomic techniques to accelerate and detect small concentrations of tracer atoms in environmental samples. Measures that would otherwise be difficult or impossible are routine based on their sensitivity.Cosmic rays from elsewhere in the sky bombard the Earth's atmosphere and surface, creating a long-lived radioactive "cosmogenic nucleus". Because carbon in organic matter is not removed from the atmosphere when an animal or plant dies, 14C currently remains with a half-life of 5700 years, and provides a measure of the age of the remaining object.Other cosmic nuclei can be used in a similar way to determine how long the material contained in them has been shielded from cosmic rays and the atmosphere.The concentration of the long-lived isotope 81Kr is measured in an aquifer in the Great Artesian Basin in Australia and is used to determine how long its water has been dehydrated by young groundwater.Cosmogenic nuclei are extensively used to study environmental phenomena. The amount of 10Be in the ice core has been measured by AMS and is found to be correlated with solar activity.This correlation may allow the study of solar activity over 10,000 years of time compared to the currently available 400-year record. Then it may be possible to determine to what degree solar temperature is responsible for climate variation.



Energy production and environment

Energy efficiency improvements directly contribute to environmental quality, and many of these improvements are applications of physics. Lighting efficiency has increased dramatically, increasing from fluorescent lighting to incandescent lighting from kerosene lamps.Its direct effect on the energy required for space heating and cooling, as well as the thermal resistance of the window, increased the use of thin physics coatings, gaining insights from nuclear physics.Oxygen sensors in automobile exhausts, which allow very low emissions of hydrocarbons, carbon monoxide, and nitrogen oxides, are another application of physics.

Metal recycling is also in this category:Increasing competition for secondary metal production, or recycling, relative to primary metal production, was revived in part by many innovations in materials science.Replacement and attraction of alternative forms of energy production are also important. Fossil fuels essentially produce carbon dioxide as a by-product of energy extraction. Two major options are nuclear power both nuclear fission and nuclear fusion and renewable energy (in many forms, including wind, hydropower, photovoltaic cells, and solar thermal energy.Research and development efforts on all these alternative technologies are going on worldwide. Each has its own strengths and weaknesses. The sustainability of industrial society is likely to be very high if humanity continues to pursue a broad portfolio of energy production options.

Conclusion

Environmental science is highly interdisciplinary. Life sciences, chemistry, applied mathematics, geology, oceanography and physics are all front and center.Physics plays a broad role, making direct contributions to energy production and environmental projects and indirectly through basic research, providing technical spin-offs from research programs, and helping to educate technically literate populations Is able to react to environmental issues. Provides basic research foundations in atmospheric and oceanographic physics.

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