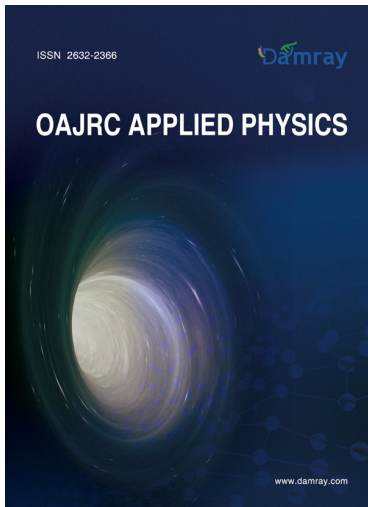


# Current Situation and Development of Environmental Geophysics



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## Abstract

In the era of continuous advancement of science and technology, both environmental protection biology and geophysics have had a great impact, especially the increasing influence of geophysics on environmental research, and this process has also led to a new type of science and technology The emergence of environmental protection geophysics. The emergence of environmental geophysics did not happen overnight. It appeared as early as at home and abroad. Around 1970, environmental geophysics had already received attention. Since 1985, environmental geophysics has been regarded as a relatively independent science.

## Keywords

Environment, subway physics, status quo, development

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 OPEN ACCESS

DOI: 10.26855/oajrcap.2022.12.001

Received: October 16, 2022

Accepted: November 15, 2022

Published: December 12, 2022

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## Introduction

Environmental geophysics is a combination of natural science and environmental science, using geophysics and environmental science to provide solutions to various problems in the global environment, so that the global natural environment can be changed, and the scope of people's activities will also change. So as to ensure that people's living activities will not be disturbed by various geological disasters.

### 1. General overview of environmental geophysics

Environmental geophysics is a natural science with the characteristics of both, which is produced by the interaction

and influence of environmental natural science and geophysics. At present, geoenvironmental physics is a science and technology with great potential for future development, and its application fields are very wide[1]. It not only involves the monitoring of the environment and the prediction of changes in the natural environment, but also provides specific and feasible solutions to the existing environmental pollution phenomena. Environmental geophysics, also known as near-surface geophysics, is most distinguished by its high resolution, precision, and reliability. Ring geophysics is the most basic research field of the earth's lithosphere, pedosphere, water pipes and atmospheric pipes[2]. Its fundamental purpose is to apply geophysical knowledge to research and solve all the problems that occur in the field of environmental science research. Environmental geophysics is to explore the close relationship between the geophysical field and the physical characteristics of geographical substances and people's daily life[3]. The so-called connection refers to: first, geophysics has a great impact on human beings and other living things, and on the contrary, different activities that people carry out on the earth will cause obvious changes in geophysical fields and geographical substances; second, the changes in the physical characteristics of the earth and the geophysical field are caused by the changes in the natural environment and artificial geographical environment in which people live. The fields of study of earth ecophysiology include: the effect of geophysical fields on ecology, monitoring and treatment of pollution, and exploring the changes caused by the whole world.

## **2. Significance of Applied Environmental Geophysics**

First, the cost is small and the benefit is high. Since the use of environmental planetary physics will not go through large-scale drilling or even trenching during the entire process of use, and directly use microgravity, ground penetrating radar and other means to directly implement three-dimensional remote sensing monitoring of groundwater media from the ground, so, the work efficiency is quite high, and the cost paid is small. Second, the coverage rate is also quite high. Due to the use of environmental planetary physics during actual use, it can fully conduct reasonable research on the overall natural environment, and finally obtain reasonable results[4]. However, the previous methods are often just sampling and drilling at a certain location, or even a certain antenna. Third, the effect is quicker. Modern environmental geophysics mainly uses network information technology and computers to complete the processing of geophysical information, thereby greatly reducing the cost of scientific research[5]. Fourth, the field of use is also very extensive. More specifically, environmental geophysics can also be used in various complex environments such as seas, mountains, and north and south poles. It has huge coverage space and application capabilities, and is very little affected by the environment. Fifth, conduct non-destructive testing. Sampling the surrounding environment such as nuclear waste warehouses and dams is quite troublesome for previous scientific research and analysis. However, the application of environmental geophysics can only use ground detection methods to explore related issues, without using methods such as drilling to reduce damage to the surrounding environment. But with the progress of time, people must make more scientific research on the development trend of the future application of environmental geophysics, so as to improve the efficiency and level that should be[6].

## **3. Current status of environmental geophysics**

According to the national geophysical activity survey and data in 1993, the U.S. crude oil and natural gas exploration plan accounted for 65% of the geophysical activity from the previous 85%. The geophysical activity occupied by metal ore exploration, dropped from the previous 9 percent to 2 percent; however, the geophysical utilization of environmental science exploration increased from the previous 1 percent to 26 percent. From the current point of view, the discussion of environmental geophysics has become the focus of attention in the 21st century, and it will inevitably become the most critical component of contemporary geophysics. Our country's environmental geophysics was proposed in 1989. In the past two decades, our country's scientific researchers have made great efforts, and have achieved excellent results in both book writing and proposal proposals. At the same time, environmental geophysics has also attracted the attention of those engaged in physics research. After the reform and opening up, economy has grown exponentially. The result of economic development is not only economic prosperity, but also various environmental damages. Water and soil are continuously polluted and destroyed. So far, environmental geophysics belongs to an incomplete scientific system. The incompleteness here is not just at the conceptual level. In addition, it has not yet obtained and received widespread attention from the society. A professional scientific organization has been established, but there is still no corresponding organization. This requires the Chinese government to increase policy support, so that environmental geophysics can fully play its functions and roles, and develop it. For more complete science and technology[7].

## 4. Development direction of environmental geophysics

Recently, the Department of Environmental Geophysics has focused its research on the search, monitoring and discussion of groundwater environmental damage, natural nuclear radiation, electromagnetic radiation, geophysical field environment, chemical waste and its. The research fields should be the selection and monitoring of storage sites, the study of water resources in arid areas, and the systematic discussion of ecological geophysical processes. The most important thing here is to study the interaction between the objects that cause environmental pollution and the objects in the earth, and how the objects that cause environmental pollution can affect the physical field of the earth. Therefore, in future research, geoenvironmental physicists should pay more attention to the management and protection of the earth's environment, the prediction of geological disasters, and the improvement and development of the latest geoenvironmental physics technology.

### 4.1 Governance and protection of global environmental pollution

The destruction of environmental pollution has become the biggest pollution problem facing the world at present. Therefore, how to effectively manage environmental pollution is very important. The efficient use of environmental geophysics technology can further eliminate and reduce environmental pollution problems. In this process, the extremely advanced scientific and technological conditions of environmental protection geophysics are needed. Relevant scientific researchers need to further explore and research the best environmental protection science and technology and geophysics, and implement comprehensive optimization and improvement. At the same time, promote The two can be effectively combined to develop treatment models and solutions that are closest to the actual situation of the earth, avoiding secondary pollution of the earth's environment, gradually improving its condition, and fully exerting its new vitality [8].

### 4.2 Prediction of various geological disasters

Geological natural disasters are the biggest natural threats that humans encounter in the world today, and they are unpredictable. These natural threats mainly include earthquakes, volcanoes, landslides, mudstone flows, tsunamis, etc. Human beings who have died in geological natural disasters over the years There are also countless, so how to better predict geological natural disasters is very much needed. Geological disasters are mainly caused by physical changes caused by the earth. This involves not only natural science but also environmental science knowledge. Therefore, we need to make reasonable use of natural geophysics knowledge to predict geological disasters more reasonably, so that human Avoid being affected by various natural environments.

### 4.3 Improvement and research and development of geophysical technology

All exploration of the earth must be supported by modern advanced technology. The current high-tech cannot realize all the exploration of the earth's environment. For example, the prediction of earthquakes cannot be 100% accurate. For this, researchers need to use Physics technology has developed more perfect and sophisticated instruments and equipment, making greater contributions to environmental governance and even natural disasters[9].

## Conclusion

To sum up, environmental geophysics is a new and rapidly growing field of environmental science, which is inseparable from human daily life, which requires it to keep moving forward, because there are many environmental The subject must be dealt with in its own way, developed scientifically with its own method, deal with the phenomenon of natural pollution, study the direction of dealing with environmental pollution, make the combination of natural science and environmental science and technology more effective, and make environmental geophysics continue to go ahead[10].

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