

Application of Short Term Weather Forecast in Meteorological Disaster Prevention

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Keywords: Short Term Weather Forecast, Meteorological Disaster Prevention, Application

Abstract: The application of short-term weather forecast in meteorological disaster prevention is of great practical significance. The relevant weather broadcast mode has timeliness and comprehensiveness in today's digital and information age, and can play a practical value and role in weather forecast management and meteorological disaster prevention. For example, it can help managers and operators take scientific and effective measures to prevent and control climate disasters through real-time transmission of information. At the same time, it can also formulate more scientific and effective management planning in the process of urban governance and urban management, reduce the cost of various resources invested in meteorological disaster prevention, and improve the efficiency of disaster prevention and control. In this paper, the application of short-time weather forecast in meteorological disaster prevention is briefly analyzed and discussed.

1. Introduction

At this stage, in the process of meteorological disaster prevention, combining short-term weather forecast can further improve the level of meteorological disaster prevention and control management. Through refined and efficient disaster prevention and control measures, combined with scientific and effective prevention and control programs, the level of short-term weather meteorological disaster prevention and control can be improved.

2. The significance of short-term weather forecast

In today's fast-paced era, the operation efficiency of all walks of life has been effectively improved, and the operation of related industries has a strong timeliness. Therefore, short-term weather forecast also has a significant effect on promoting the stable and efficient development of all industries. Especially in the process of early warning and control of some natural disasters, it can help all industries avoid natural climate risks by providing real-time and efficient information for all industries. In today's era of rapid development of digital and information technology, the accuracy and timeliness of weather forecast have also been significantly improved, and the prediction of natural environment has become more accurate, reliable and efficient, which can provide more comprehensive and complete data services and information services for the industry, so as to effectively avoid the corresponding potential risks. Short term weather forecast has also been widely concerned by various industries in this link. The natural environment change trend in the region can

be predicted and evaluated in detail. Combined with the hourly prediction model, the comprehensive space management and control can be completed with the help of satellite images, atmospheric data, and atmospheric information. With the participation of experts, the dynamic information in the atmosphere can be effectively predicted, adjusted, and analyzed. The multi-dimensional and multi spatial information recording and information sorting can be carried out to complete the refined calculation Fine control.

It can be seen from the comparison with the traditional prefabricated prediction form that the short-term weather forecast is usually combined with the 12 hour broadcast system, which can achieve more effective evaluation and analysis of the weather changes, and can make scientific and efficient judgments on the weather changes and the harm to the industry. Then, combined with efficient data statistics and data analysis, it can make efficient judgments without delay. Compared with traditional TV recording and broadcasting, short-term weather forecast can display relevant data information on the network platform by using electronic data technology and information technology to help social enterprises and individuals monitor real-time and comprehensive information by using relevant APP, such as effective analysis and evaluation of body temperature, air humidity, pressure and air quality, and help individuals and groups take effective countermeasures.[1] In addition, the temporary weather forecast can also give an early warning of extreme weather two hours in advance. With the help of rich network ports, users and groups can take precautions against and control relevant disasters in advance.

3. Analysis of the role of short-term weather forecast in meteorological disaster prevention

Short term weather forecast plays a relatively significant role in meteorological disaster prevention. Relevant weather forecast information can be transmitted timely and accurately, which can help relevant managers develop more scientific and efficient control measures; At the same time, short-term weather forecast also has a regional targeted role, which can effectively warn and predict the sudden weather events in local areas, improve the ability of urban disaster prevention and control, so as to make the development of urban economy more rapid and efficient. In addition, relevant technologies rely on advanced platforms to make the collation, collection and control of various meteorological data more authoritative and efficient. During this period, various structured and semi-structured data in weather information can be effectively converted with the help of artificial intelligence technology and big data technology to complete data regulation, which can play a practical value and role in urban disaster prevention and control and agricultural production and disaster reduction; The most important thing is that short-term weather forecast can also play a complementary role, making the content of weather broadcast more comprehensive.

3.1. It plays the role of timely and accurate transmission

The weather forecast is accurate and accurate, which can effectively display various data information in the forecast process, and provide corresponding help and support for users and enterprises' outdoor safety. Users and enterprises can formulate scientific and efficient prevention and control management measures according to the disaster level and their own actual situation while receiving the natural disaster information, so as to avoid the adverse impact of related disaster problems on their own development and the development of industry enterprises.[2] From the perspective of time, it can be seen that weather forecast is timely, which is of great practical significance to promote the development of the industry. Weather forecast can effectively calculate, count and analyze the weather changes in the future region, effectively judge the weather conditions in some regions through satellite data and meteorological assessment, and make more scientific and efficient predictions of the surrounding air pressure and wind direction.

It can be seen from the comparison with the long-term forecast that the short-term weather forecast is accurate and can make a more scientific and effective early warning for the temporary approaching weather. It has fast response speed, wide service scope, small calculation error, and can effectively respond to the changing trend of the current environment to make real-time and efficient response and feedback. Therefore, the use of short-term near weather forecast in meteorological disaster prevention can rely on the timeliness and accuracy of data information to make accurate prevention and control for various industries in the process of planning, preparation, management and control. At the same time, the relevant weather forecast also has the characteristics of real-time adjustment with regional environmental changes. Through accurate positioning and accurate control, it provides good service support for people and provides basic guarantee for the development of the industry.

3.2. Targeted role

Short term weather forecast is relatively common in the process of regional information measurement. Short term weather forecast needs to rely on meteorological data, data information and satellite data to measure and control regional environmental changes efficiently. At the same time, the whole weather forecast system also has diversified service windows, and all industries can dock with the whole system to obtain real-time and efficient information services. During this period, relevant departments and institutions need to build a network communication platform, connect multiple windows, departments and institutions, transmit relevant data information in real time and efficiently, help users do effective prevention and control management, and reduce the adverse impact of natural disasters on industry operation. For example, in the process of forecasting and analyzing extreme weather such as typhoon, typhoon path. The effective prediction, analysis and evaluation of the movement track can help the residents along the line quickly make corresponding coping strategies. At the same time, it can also make a more scientific and efficient judgment on the influencing factors of the surrounding environment, providing corresponding support for the subsequent emergency rescue work. Therefore, the short-term weather forecast can control the time within two hours during the broadcasting of relevant information, help residents in relevant areas to make emergency preparations in advance, and minimize the losses caused by disasters.

3.3. Improve the ability of prevention and control management

In today's digital and information era, combined with short-term weather forecast and efficient information transmission strategy, disaster prevention and control ability can be effectively improved. Traditional weather forecast is limited to radio and television, and its information output has greater limitations. Short term weather forecast can be transmitted in multiple dimensions and channels through the Internet platform, which can supplement and improve the details of long-term weather forecast, Under the support of short-term information, the development of weather monitoring system is more comprehensive, perfect and efficient. At the same time, it has a more three-dimensional spatial monitoring and management structure, so that the regional disaster prevention and control level and efficiency can be effectively improved. For example, for some disaster projects that require long-term prevention and control, short-term weather forecast can help the relevant main departments to formulate more detailed prevention and control management measures, reduce the cost of resources invested in disaster prevention and control, and improve the efficiency of prevention and control.

3.4. Carrying platform for advanced technical means

In the new era of meteorological disaster prevention activities, various platform systems will also be combined to improve the comprehensive operation level of the whole system, such as combining

spatial positioning technology, dynamic imaging technology, and remote sensing technology to provide corresponding support and help for the prevention and control of meteorological disasters. In today's era of rapid development of science and technology, advanced equipment has been further updated and improved. The form of weather forecast has been further developed and transformed in the direction of intelligence and refinement. Computers are highly efficient in satellite computing, satellite feedback, and data adjustment and identification. They can make real-time and efficient judgments on regional environmental factors, and conduct evaluation and analysis in many aspects. With the help of Internet technology, data information and database systems can be effectively used, various valuable information resources can be mined, weather information, forecast information and data sources can be matched one by one, valuable data in relevant regions can be effectively used, and the accuracy of short-term weather forecast and near weather forecast in data forecast management can be improved.

For example, the unstructured and semi-structured data in the weather information can be structurally transformed through artificial intelligence technology and big data technology, which can make the adjustment and control of weather data more standardized. At the same time, the cloud change trend can be accurately and efficiently analyzed and evaluated with the help of weather radar equipment, which can effectively assess and judge the dispersion and density of rainfall clouds, and achieve effective prediction. Analyze and upload relevant information to the network platform to help people quickly formulate corresponding countermeasures. In addition, with the development of the times, the use of mobile intelligent terminal equipment in daily life is relatively common, and relevant special equipment can be used to make sophisticated early warning control to reduce the probability of natural disasters and accidents.

3.5. Role in urban disaster prevention and reduction

It can be seen from the past practice cases that some cities are often at a loss when dealing with sudden meteorological events due to the lack of short-term weather forecast support in the process of disaster prevention and mitigation. For example, when encountering sudden heavy rainfall, the underground garage is irrigated, resulting in personnel and property losses. Short term weather forecast can provide special support and help for urban meteorological services, reduce losses from multiple dimensions and directions in the process of urban disaster reduction and prevention, and improve the efficiency of prevention and control. In terms of ecological environment protection, combined with short-term weather forecast, it plays a vital role in the process of preventing natural disasters and sudden accidents. Combined with personalized meteorological services, it can improve the scope and scope of services, and ensure the timeliness and professionalism of early warning work by combining multiple means of transmission and communication. In the process of strengthening early warning control and early warning management, short-sighted near weather forecast can effectively adjust and control urban air quality and geological disasters. In urban fire prevention and other services, short-time near weather system can be supported by specialization, providing guarantee for urban economic development.

3.6. Application of disaster prevention and reduction in agriculture and aquaculture

In the traditional agricultural production activities, there is also a serious situation of relying on the weather, that is, it is difficult for producers to resist and offset the natural forces, which makes it impossible to effectively improve the quality and efficiency of agricultural production. In today's digital and information era, strengthening agricultural disaster prevention and reduction activities has great practical significance for improving the agricultural economic level. In the process of traditional agricultural disaster prevention and reduction. The drought problem can be effectively resisted by

means of artificial rainfall. Such planned prevention and control measures are of great practical significance for promoting agricultural production. For some sudden climate problems, such as heavy rain, hail and snow, if the prevention is not timely, it will cause heavy blow and damage to the development of agricultural production and aquaculture. Therefore, short-term weather forecast can be used to help agricultural producers make more scientific and efficient production management adjustments based on climate information and climate conditions in production activities, and take effective countermeasures. For example, when dealing with heavy rainfall, farmers can take drainage and water conveyance measures in advance to prevent crops from being flooded by irrigation. When facing hail, external prevention and control measures can be taken in time to avoid external impact damage to crops. Therefore, short-term weather forecast can provide specialized support in the development process of smart agriculture production, help relevant agricultural practitioners make rapid adjustments, improve the level and efficiency of fine control, and effectively improve the quality of agricultural production.

3.7. Play a complementary role

It can be seen from the literal meaning of the weather forecast that there are prediction factors in the relevant information, so the relevant information is not 100% accurate. The weather forecast can only predict and predict the general development trend of the climatic and environmental characteristics in local areas, but there are also corresponding change factors, and the relevant change factors cannot be effectively controlled and adjusted in the long-term broadcast mechanism, At this time, the long-term weather forecast information can be effectively modified and repaired by combining short-term and temporary information, and the sudden weather can be more effectively predicted through refined data regulation and data processing, and the long-term weather broadcast can be further modified and improved. The weather early warning system can be more complete and comprehensive by shortening the broadcast time interval and conducting real-time and efficient repair processing.

4. Conclusion

In general, the use of short-term weather forecast in meteorological disaster prevention is of great practical significance. During this period, relevant departments and institutions should improve the short-term weather forecast system, and improve the management level of short-term weather forecast with the help of various digital technologies, information technologies, and artificial intelligence technologies.

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