

BIG DATA ENABLING ECO-ENVIRONMENTAL PROTECTION THEORETICAL LOGIC, APPLICATION PROGRESS AND TREND OUTLOOK

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Abstract: With the continuous development of society and science and technology, people's requirements for the living environment are becoming more and more demanding, but the reality is that environmental pollution is becoming more and more serious, with the development of the Internet and mobile communication technology, the field of environmental protection requires the introduction of big data technology and the use of environmental monitoring technology to monitor the environment, environmental pollution assessment and control, ecological and environmental fields from information collection to processing has also entered the information and digital era. The ecological environment field from information collection to processing has also entered the information and digital era. Ecological environment big data is based on continuous observation of ecological environment elements, integrating massive multi-source and multi-scale information, and realising integrated analysis and information mining of ecological environment big data with the help of artificial intelligence, cloud computing, model simulation and other big data analysis technologies. Big data has been initially applied in the field of ecological environment, such as in the detection of water quality, global climate change prediction, soil pollution management and other aspects of the role is obvious. At present, there are still many problems in the development of ecological environment big data in China, including the difficulty of data sharing, backward monitoring technology, heavy reliance on imports of sensors and other monitoring equipment, and insufficient capacity for data integration and in-depth analysis. With the progress of big data technology, big data will play a huge role in the future in solving ecological and environmental health problems, improving the level of early warning and forecasting of major ecological and environmental risks, and improving the level of scientific research in the field of ecology and environment. Big data will ultimately achieve quantitative and refined ecological environment management decisions, diversified, professional and intelligent ecological environment information services, and provide technical guarantee for China's sustainable socio-economic development and ecological civilisation construction.

Keywords: Big data, Ecology; Environmental testing, ecological network