# 2022_"ShuWei Cup"

# Problem D：Research on the loss evaluation and coping strategies of extreme climate disasters under the Triple La Niña Event

From July to August 2022, many cities in the south of China experienced many days of hot weather, while in some parts of the north there were also large-scale heavy precipitation. In addition, many European countries have also experienced historically rare drought disasters. Whether it is high temperature weather in the south, heavy precipitation in the north, and dry weather in Europe, it is unprecedented for decades, and even the highest temperature, heavy precipitation and drought disasters have been recorded since meteorological data. The high temperature weather has caused economic losses and casualties to a certain scale in many cities in the south and European countries. Similarly, the heavy rainfall has caused a significant reduction in agricultural production or even no harvest in some areas of the north. The meteorological department attributed this high temperature phenomenon and heavy precipitation event to the Triple La Niña event.

The latest data from the World Meteorological Organization shows that the La Niña event, which has lasted for a long time, is likely to continue until the end of this year or beyond. This will be the first Triple La Niña event in the 21st century, meaning three consecutive La Niña winters in the northern hemisphere. The La Niña event is a phenomenon in which the sea surface temperature in the eastern and central equatorial Pacific continues to be abnormally cold. The British "Nature" magazine issued a warning in June that more La Niña events will have multiple impacts, such as increasing the probability of flooding in Southeast Asia, increasing the risk of drought and wildfires in the southwestern United States, forming multiple hurricane, cyclone and monsoon patterns in the Pacific and Atlantic Oceans, and triggering weather changes in other regions.

Please complete the following four questions in combination with international meteorological data free download platforms such as https://www.ncei.noaa.gov/maps/daily/ and their related optimization modeling methods:

（1）Conduct statistical analysis of the major countries and regions involved in the global Triple La Niña event, and predict the possibility of the Triple La Niña events in the future;

（2）Taking a country as an example, evaluate and analyze the various types of disaster losses caused by heat and drought under the Triple La Niña event, and provide targeted coping strategies.

（3）Taking a country as an example，evaluate and analyze various disaster losses caused by floods under the action of the Triple La Niña event, and provide targeted coping strategies;

（4）Please write a report of no more than 2,000 words for the relevant management in response to the Triple La Niña Event.