

# Data Mining Test (DMT)

## What is DMT?

The data mining test (DMT) is designed to test individual students. It consists of two independent investigations. For each question, students need to explore online data accessed via links provided. Students should answer the questions sequentially, following the guidance provided in the test.

In each data mining test, students will deal with some simple calculations by themselves (a calculator would be useful). Also, websites are provided for each investigation, where some more complicated calculations and data analyzing can be done online. But don't worry about mathematics! High-school level math is sufficient for calculations, and more sophisticated calculations will be done online by the website. Instructions and case studies will be provided, so that students can learn the principles (if beyond the knowledge of high school) and the methodologies in the calculations. Then, students will solve problems by using these principles and following the methodologies. The purpose of this exercise is to evaluate students' ability in understanding the principles by checking online materials, analyzing the data, and drawing their own conclusions under the given geological background.

To complete the data mining test, please make sure that all students have their own computer and have a good Internet connection.

The text of the data mining test will be sent to the mentor who is in charge of the National team, 16 hours before the beginning of the test. Mentors are responsible for the translation of the DMT text (provided in English) into their own language, if necessary. The mentor should send the translated text as soon as possible to Bing Shen ([bingshen@pku.edu.cn](mailto:bingshen@pku.edu.cn)) so that it can be provided to the students at the right moment. The students should return their answers to all questions via email to Bing Shen ([bingshen@pku.edu.cn](mailto:bingshen@pku.edu.cn)).

The answers will be checked by the jury, and the awarding of medals will be decided by the Evaluation Board.

### **About DMT for IESO 2023**

The theme of DMT this year is ‘the Past is the key to the Present’ . Global change is a great challenge for everyone; the society is confronted with a series of climatic and environmental problems. Lessons from the geological past can help us address these crises. In the DMT, students will be guided to check the data on the website. No additional software is required. We are seeking help from the DDE (Deep-time Digital Earth) platform, which will provide usernames and passcodes for students for online access to data. We expect that through DMT, students can learn something from the past (or deep time) Earth system and obtain some historical views of the global change in the modern Earth system.