Graphical Abstract

Depositional Environment Recognition Based on Support Vector Machine Algorithm — A Case Study of the Mengdong-Songnen Black Soil Subregion

Song Gaoge, Tan Lihua

Highlights

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- Using the support vector machine algorithm, we innovatively established a high-performance depositional environment classification model based on grain size parameters as the indicators.
- Research highlight 2

Depositional Environment Recognition Based on Support Vector Machine Algorithm — A Case Study of the Mengdong-Songnen Black Soil Subregion

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Abstract

Sedimentary environment recognition is a crucial component of sedimentology analysis. This study focuses on the Mengdong-Songnen Black Soil Subregion in Northeastern China, aiming to elucidate the distribution and characteristics of sedimentary environments within the region.

Keywords: Depositional environment, Support vector machine, The black soil region in northeastern China

1. Introduction

Grain size distribution (GSD) is an important indicator of sedimentology and geomorphology research. The GSD reflects multiple pieces of information about sedimentary processes, such as weathering, erosion, and transportation (Friedman et al., 1978; Boggs et al., 2012). The formation of specific GSD characteristics and their variations within profiles are influenced by various factors, such as provenance, transport distance, transport mode, depositional environment, et al. These characteristics can be seen as the results of long-term interactions of multiple surface processes (Shi et al., 1999; Nie and Li, 2017; Yu et al., 2023).

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2. Regional setting

3. Material and methods

3.1. Sampling design and sample collection

4. Results

5. Discussion

6. Conclusions

6.1. Example Subsection

Subsection text.

6.1.1. Mathematics

This is an example for the symbol α tagged as inline mathematics.

$$f(x) = (x + a)(x + b) \tag{1}$$

$$f(x) = (x + a)(x + b)$$

$$\begin{aligned} f(x) &= (x + a)(x + b) && (2)\\ &= x^2 + (a + b)x + ab && (3) \end{aligned}$$

$$\begin{aligned} f(x) &= (x + a)(x + b) \\ &= x^2 + (a + b)x + ab && (4) \end{aligned}$$

$$\begin{aligned} f(x) &= (x + a)(x + b) \\ &= x^2 + (a + b)x + ab \end{aligned}$$

$$\begin{aligned} f(x) &= (x + a)(x + b) \\ &= x^2 + (a + b)x + ab \end{aligned}$$

1	2	3
4	5	6
7	8	9

Table 1: Table Caption

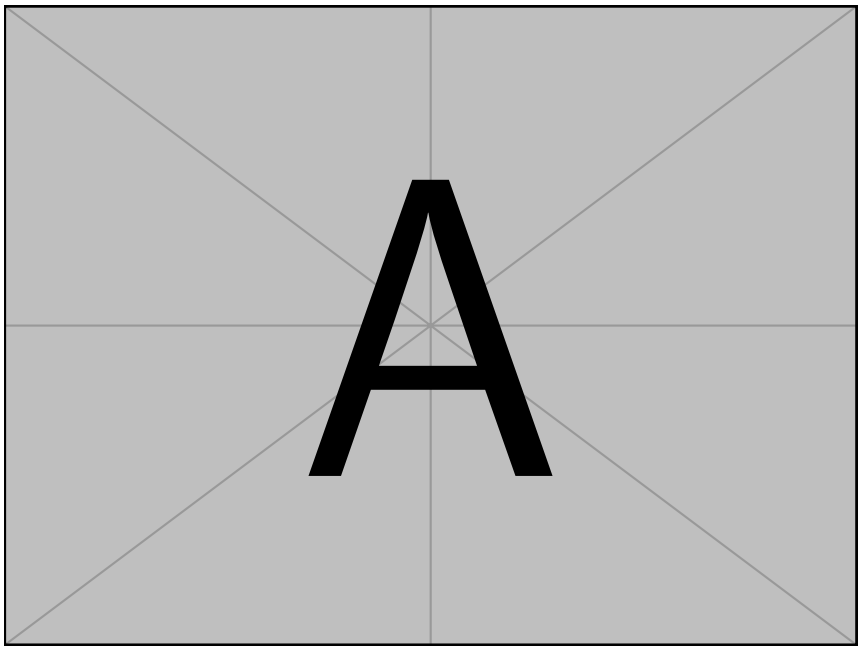

Figure 1: Figure Caption

Appendix A. Example Appendix Section

Appendix text.
Example citation, See .

References

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