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<b>Keywords</b>	<a href="#">Dabie Orogen</a> , <a href="#">Low-Temperature Thermochronology</a> , <a href="#">Paleotopography</a>
<b>Abstract</b>	The paleotopography reconstruction of orogen has an important research value on the study of mountain building and the study of orogen' s regional control over the paleoclimate change. Considering the Dabie orogen' s regional difference in exhumation, this article models the post-orogenic exhumation rates and the relief evolution rates by low-temperature thermochronology and age-elevation relationships. The result shows that the mean exhumation rates (0.07~0.08km/Ma) of the middle block, the southwest block, and the southeast block are higher than the rate (0.06 km/Ma) of the northwest block and the northeast block. The relief evolution rate of the northeast block (3.5) is the highest, the middle block (3.0) follows, the southeast block (2.5) goes after, and those of the north-west block and south-west block (2.0,1.5) are the lowest. This is might be related to the thermal doming extensional structure of Dabie orogen in Cretaceous.
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## The Paleotopography Reconstruction of Late Cretaceous Dabie Orogen by Low-temperature Thermochronological Age-elevation Relationships

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**Key words:** Low-temperature Thermochronology, Dabie Orogen, Paleotopography

**Abstract:** The paleotopography reconstruction of orogen has an important research value on the study of mountain building and the study of orogen's regional control over the paleoclimate change. Considering the Dabie orogen's regional difference in exhumation, this article models the post-orogenic exhumation rates and the relief evolution rates by low-temperature thermochronology and age-elevation relationships. The result shows that the mean exhumation rates (0.07~0.08km/Ma) of the middle block, the southwest block, and the southeast block are higher than the rate (0.06 km/Ma) of the northwest block and the northeast block. The relief evolution rate of the northeast block (3.5) is the highest, the middle block (3.0) follows, the southeast block (2.5) goes after, and those of the north-west block and south-west block (2.0,1.5) are the lowest. This is might be related to the thermal doming extensional structure of Dabie orogen in Cretaceous.

### Introduction

The paleotopography reconstruction of orogen provides constraints for the study of mountain building and the study of orogen's regional control over the paleoclimate change. The research on Dabie mountain building and its regional control action over the climate change of the north and south China has attracted much attention of scholars home and abroad(e.g. [1,2,3,4]). Therefore Dabie orogen's paleotopography reconstruction has an important research value.

The quantitative research on the paleotopography reconstruction of the late cretaceous Dabie orogen is still in the initial stage. So far, Braun et al [5,6] has modeled its post-orogenic exhumation rates and the relief evolution rates by low-temperature thermochronological age-elevation relationships. Taking the regional difference of exhumation into consideration, this article divides the Dabie Mountain into several regions and models their post-orogenic exhumation rates and the relief evolution rates by low-temperature thermochronological age-elevation relationships, and then makes comparison between them.

### Simulation Flow

In order to simulate the paleotopography, we introduce the factor  $\beta$  [7] as the relief evolution rate. It represents the multiples of the elevation in certain geological age over that of present time. To obtain the differences between different regions, we separate the entire study area into several smaller regions as shown in the figure 2. The separation is made on the basis of age contour,