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技术应用

基于SRTM-DEM的阿尔泰山构造地貌特征分析

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摘要：

基于美国SRTM-DEM数据，利用彩色晕染、密度分割与GIS空间统计分析等技术，并结合地质资料，通过地形高程、地表坡度

及地形剖面等分析手段，对阿尔泰山的构造地貌特征进行初步分析。研究表明，阿尔泰山脉平均海拔约1 790 m，平均坡度约21°

，其高海拔与高坡度的现代地貌特征，主要与强烈的断裂构造活动有关； 山脉严格受到以北西向为主的断裂构造活动的影响与控

制，其发育的构造地貌单元基本上呈北西走向特征； 山脉阶梯状地貌特征明显，共发育5级剥夷面，不同级剥夷面所处的海拔不一

样，同级剥夷面具有东北侧高于西南侧，山脉东、中段高于西段的特点。

关键词： SRTM-DEM 阿尔泰山 构造地貌 剥夷面

AN ANALYSIS OF GEOMORPHOLOGY CHARACTERISTICS OF THE ALTAI MOUNTAIN BASED ON DEM

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Abstract:

Based on American SRTM-DEM(90m) data and geological information and adopting color-dye, density-class

and GIS spatial statistic analysis technology，the authors studied geomorphological characteristics of the Altay

Mountain by means of topography-elevation analysis, surficial-slope analysis and terrain-section analysis.

According to the results of the study, the Altay Mountain has an average altitude of 1 790 m and an average

surficial slope of 21°, and the current geomorphological characteristics of high altitude and steep slope are

mainly attributed to strong tectonic activities; the mountain range is strictly affected or controlled by the NW-

trending fault activity, and hence the geomorphological cells mostly extend in the NW direction; the mountain

assumes obvious ladder-like modern geomorphology, and has developed 5-level denudation-planation surfaces with

different altitudes, with the northeast denudation-planation surface higher than the southwest surface, and the

east and central denudation-planation surface higher than the west surface.

Keywords: SRTM-DEM The Altai mountain Geomorphology Denudation-planation surface

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