

Volcanic Landform of Iwate Volcano Interpreted from Statistics of DEM-derived Morphometric Parameters

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Over the last three decades, digital elevation models (DEMs) have been developed as surface data instead of contour lines to allow numerical analysis or modeling of terrain by computer. DEMs have allowed the development of algorithms to easily derive morphometric parameters such as slope gradient, aspect and topographic openness of any points of surface, and to interrelate their distributions. However, statistic of morphometric parameters for a region is often difficult to interpret on its own. Evans (1998) described some generalizations about statistics of slope and curvature distribution for cirques. Prima et al. (2003) described that different surficial processes and stages in the evolution of slopes creating landscapes with different shapes can be identify using mean and standard deviation from slope and openness. The emphasis of terrain convexity and concavity in openness facilitates the interpretation of landforms on the Earth's surface. Using statistics of slope and openness, interpretation of volcanic landforms of Iwate Volcano according to their geological successions is offered here. The northeastern sector of Iwate Volcano that has relatively young strata is clearly identified against other sectors of the volcano except those in which the ages of landform formation are relatively close.