

## Topographical features of Fuji volcano as seen in the polar coordinate system

CHIBA, Tatsuro<sup>1\*</sup>

<sup>1</sup>Asia Air Survey Co., Ltd.

### Introduction

Fuji volcano is the highest mountain in Japan and the most active volcano in past 12 thousand years, in Japan except for the caldera eruption (Miyaji 1988). The inclination is loosely about 300,000 people each year climb to the summit.

As a result of repeated eruption of central vent, volcanic body of a huge cone-shaped with a diameter of 10km high specific 2000m is formed around the crater. Fuji volcano had piled up in stages on Komitake, Old-fuji, and New-fuji. The remaining part of the old edifice also so as to project on the slope. Fuji is seen variety profile from the direction by such features.

### Study range

In this paper, the technique of polar coordinate conversion. Study subjects ranged circular radius 13.5km centered summit. This point is not the highest point, the approximate center of Dainai-in Institute (The latitude is 35.36295 and longitude is 138.73035). The terrain data is base map information 0.4 seconds mesh of the Geographical Survey Institute (about 10m) source, was used in resampled to 50m mesh Japanese orthogonal coordinate system (VIII, system).

### Angle of repose

Slope gradient of the volcano, is determined by the movement mechanism and state of matter that has been brought to the ground from the crater in general, the angle of repose and stable gradient. Looking at the topography of the polar coordinate transformed, it can be seen that the portions to concentrated lateral cone is higher than ambient, and is raised as acne. In particular, it is found that it is concentrated in a direction 315 degrees and 135 degrees direction. It should be noted that the gap of advanced 250 degrees around, under the influence of Tanzawa is protruding from the east, to the south of Gotemba is lower.

### Projected section

Take the elevation direction from the summit, the Y-axis in X-axis, to prepare a projected section shows the projection section color grid point frequency distribution of 50mDEM. If likened to Mount Fuji skirt, bright line of lower limit corresponds to the height of the perimeter of the flared skirt. According to this chart, it can be seen that the low altitude most Fujinomiya direction of southwest. Then, a Fuji-Yoshida direction Gotemba direction, finally. Design such as bubbling southeast and northwest direction direction can be seen, but it is the effect of mountain body side of the volcano. In addition, over the surface of Lake Yamanaka from Oshino of 250 degrees from 200 degrees azimuth, elevation is significantly higher than at the periphery. In this direction there is a mountain slope body of old Fuji.

### Literature

Tatsuro Chiba (2010) Landform -50mDEM cylindrical coordinate transform analysis, Fujigaku studies, 7, 1, 3-13.

Miyaji Naomichi (1988) Activity history of younger Fuji volcano, Journal of the Geological Society, 94, 6, 433-452.

Keywords: DEM, angle of repose, profile, slush avalanche, lava flow, active fault

