Japan Geoscience Union Meeting 2015
(May 24th - 28th at Makuhari, Chiba, Japan)

SVC48-P02 Room:Convention Hall Time:May 24 18:15-19:30

Probabilistic assessment of ash fall at Meakan-dake Volcano, Hokkaido, Japan

KANAI, Hiromichi[1*] ; FUJIWARA, Shinya[1] ; NAGATA, Naomi[1] ; SAKAGAMI, Masayuki[1]

[1]Kokusai Kogyo Co., Ltd.

Meakan-dake is an active volcano, erupted four times in the last 20 years, latest eruption occurred in 2008, located on the east of Hokkaido, Japan. Municipalities around this volcano have already published hazard maps regarding the hazardous area when it erupts to citizen. However, the expected area where fallout products will cover is drawn as true circles centered at the craters on the maps. We have therefore tried to assess the probability of the ash fall area using “Tephra2” , by considering the tephra volume of the past eruption and the wind data. We have used latest wind data obtained online from Japan Meteorological Agency of Kushiro, the nearest observatory from Meakan-dake, located 55 km away from the craters. We also have assumed three patterns of the tephra volumes selected when its hazard maps were made. As a result, the probability distributions of the more voluminous ash falls are drawn as ellipses extended toward east, affected by westerlies. On the other hands, those of the smaller volume types show more likely true circle shapes. It means lower column is more affected by the wind of lower layer which have relatively wider variability than that of higher regarding the wind directions. It is important for us to have knowledge which directions ash falls would likely distribute on preliminarily because these knowledge provide us the higher priority area to prepare possible volcanic hazards. We have shown that Tephra2 would be an effective tool to assess the probability of ash falls. Especially, there are three airports, broad daily land and world natural heritage (Shiretoko) around Meakan-dake. We believe that our attempts will be developed to assess the risk of these important facilities and lands.

Keywords: volcanic hazard, tephra fallout simulation, probabilistic assessment, Meakan-dake volcano