Impact of Eyjafjallajokull Volcano Eruption on Atmospheric Temperature in 2010

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The information of FORMOSAT-3 comes from GPS occultation, and the information including temperature, humidity, and the electron concentration, etc., and I use the information of temperature. Then I compare the temperatures varying with altitudes of troposphere in different period in order to know the effect of the volcano eruption on the atmospheric environment. I get following conclusions: First, intense volcanic eruptions are often accompanied by ash, hot gases and powerful explosive energy, which could result in anomalous temperature profiles changes in the troposphere and lower stratosphere. Second, there are two different impacts of volcanic eruptions on environmental temperature changes, one is that significant troposphere warming and lower stratosphere cooling (Wang et al, 2009), and the other one is that remarkable troposphere cooling and lower stratosphere warming which had been demonstrated by this study. Last, temperature profiles changes in the major ash area were higher than those in other areas.

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