

Attempt of earth and planetary science education by dispersion simulation of pyroclastic materials emitted from the volcanic eruption

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In recent years, simulations of the dispersion of pyroclastic materials released by volcanic eruption have been actively carried out, and they are used for disaster hazard maps. Among them, Tephra 2 (Ref 1, 2), which is often used, is based on advection + diffusion model of pyroclasts in the atmosphere. It does not require much computer resources and its internal processing is easy to understand. Based on this Tephra 2, I made a simulation program called 55Tephra which is more compact, easy to use, easy to read and remodel its code. I am planning to use this 55Tephra (Fig.1) for high school students as a teaching material to teach how to model natural phenomena and the problem on modeling. Because there are some high schools that are interested in simulation of extraterrestrial volcanic eruptions such as on Mars, there is a possibility that it will become a good teaching material for earth and planetary science, that simultaneously cultivates a sense of disaster prevention modeling. In presentation, introduce 55Tephra and present various ideas of utilization.

(1) Bonadonna, C et al. (2005) JGR, 110, B03203.

(2) Mannen K. (2013) The Quaternary research 52(4), 173-187.

Keywords: tephra, simulation, high school students

