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Pyroclastic Flow from Soufrière Hills Volcano, Montserrat: Solid Block Model

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ABSTRACT

The solid block model is applied to describe the motion of the pyroclastic flow under the joint action of gravity and Coulomb friction. Special attention is paid to characteristics of the pyroclastic flow generated by Montserrat volcano in likely directions. The critical friction angle of the flow propagation is evaluated empirically. Characteristic parameters of the pyroclastic flow (travel time and impact velocity) are well approximated by linear regressions. Proposed estimations of the parameters of pyroclastic flow are useful for the rough and express evaluation of its characteristics.

KEYWORDS

Landslide Dynamics, Solid Block Model, Soufrière Hills Volcano

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