

## **Formalization of the Phenomenology of Ignimbrites in Terms of the Logic of Contexts: Preliminary Results**

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Ignimbrite eruptions have been successfully modeled in terms of physics. These models provide explanation of observed geologic properties of ignimbrites. However, extreme cases of similar process have been modeled diversely, most of observed phenomena appear to lie somewhere in between and there is no universal rule how to interpret these hazardous phenomena in terms of their extreme cases. Hence, quantitative modeling of pyroclastic flows seems to require a strict but essentially phenomenological basement.

This can be done, in the author's view, in terms of the logic of contexts. Two polar plots have been recognized in the ignimbrite context: (i) expanded pyroclastic flow from generally non-collapsed eruption column and (ii) dense, hot, ground-hugging laminar pyroclastic flow from a vent. These polar plots allow modification with new ideas and formalized and non-formalized data from various fields of ignimbrite research. The suggested approach outlines the context of research and allows semi-numerical placing an object or a range of objects predicted by a model in this context. This location is the geologic convention under which the model can be considered applicable.

The entire context of consideration may be extended to pyroclastic flow erupted under water (via high-grade ignimbrite), lava (via high-grade ignimbrite and rheomorphic ignimbrite), fallout (via welded fallout), rockfall (via debris flow and block-and-ash flow), sediment gravity and stream flows (via lahar), as well as incorporated in more complex volcanic and volcanotectonic contexts.