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## The correlation between run-up and repose times of volcanic eruptions revisited

Luis E. Lara; Sebastian Esperger

<sup>1</sup>Sernageomin

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Volcanoes usually show signs of unrest before an eruption and to detect them in advance is the basic mission for volcano observatories worldwide. Eruptions that begin without or with too short precursory activity (run-up time) challenge the ability of monitoring networks and threaten the credibility of institutions and scientists facing them. But beyond the effect of still limited monitoring networks, it seems to be some natural causes for short run-up times and hence to understand the controlling factors is a requirement. One of the most accepted hypotheses is that large interevent repose times lead to large unrest period before eruptions (run-up time) and thus they can be detected by monitoring networks. The repose time would be associated with the mechanism that recharges the magmatic system and hence with magma viscosity (and therefore magma composition) and a linear correlation between run-up and repose times has been proposed (c.f. Passarelli and Brodsky, 2012), although based on a limited number of recent eruptions. We expanded this analysis taking into account a more complete dataset (123 eruptions occurred in 2005-2015, which we add to the only 73 considered in the previous study) finding a still valid but worse linear correlation, also depending on the silica content. Despite of other factors, we suggest that some regional/local conditions could favor more rapid than expected magma ascent, probably because of transient secondary permeability activated by active crustal tectonics. The subplinian eruption of Calbuco Volcano, Chile, 2015, could be an example of extremely rapid evacuation of an andesitic magma (55% SiO<sub>2</sub>). In fact, according to the linear correlation, 54 years of repose should have led to a more extended unrest, which instead lasted only <2 hours before the onset of the eruption.