

Interactive comment on “Sensibility analysis of VORIS lava-flow simulations: application to Nyamulagira volcano, Democratic Republic of Congo” by A. M. Syavulisembo et al.

Anonymous Referee #2

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Description

This paper reports the results of a sensitivity analysis on the input parameters of the program VORIS for the simulation of lava flows, with application to the Nyamulagira 2010 eruption.

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Comments and suggested corrections

- Page 7, line 11; page 8, line 21 and page 9, line 21: UTM Zone should be 35M (not 35S), please check.
- Figure 3, 5, 7, 9: The axis label of the top-left histogram should be “Simulated pixels” instead of “true lava flow pixels”. Please check.
- Results shown in Figure 6 need to be commented: increasing the lava flow thickness from 1 to 3 m seems to increase the maximum distance reached by the lava flow, but from 3 m to 8 m it seems that this distance reduces. What is the reason of this behavior? Perhaps the path length (33 km) is not adequate?
- Figure 2 shows that the running time is almost constant when the length parameter and the number of lava flow pixels increase. Can you comment this not intuitive result?
- Perhaps, to be uniform with the text, it is better to rename subsection “4.1 Total length”: “4.1 Length parameter”.
- Figures 2, 4, 6 and 8 report in the frames a distinction between “hazard < 0.1%” and “hazard \geq 0.1%”. Can you explain how this hazard is evaluated?
- Please, describe the effect of the “length parameter” in the “Discussion and conclusions” section.

Bibliographic correction

- Page 2, line 25: “Tedesco, 2002, 2003” \mapsto “Tedesco, 2002/2003”.
- Page 3, line 4: Paper by Pouclet, 1976 is not reported in the bibliography.

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- Page 4, line 17: Paper by Verhoogen, 1938 is reported in the bibliography as 1939.
- Page 4, line 22: Paper by Pouclet, 1977 is not reported in the bibliography.
- Page 7, line 4: Leinartz → Reinartz
- Page 7, line 5: Albino et al., 2014 is not reported in the bibliography
- Page 12, line 12: Chakrabarti et al., 2009 is not cited in the text
- Page 13, line 11: Head et al., 2012 is not cited in the text
- Page 13, line 19: Kasahara, 1983 is not cited in the text
- Page 13, line 32: Pouclet and Villeneuve, 1972 is not cited in the text
- Page 14, line 18: Tazieff, 1977 is not cited in the text
- Please check the official journals abbreviations, eg: “B. Volcanol” → “Bull. Volcanol.”; “J. Volcanol. Geoth. Res.” → “J. Volcanol. Geotherm. Res.”, etc.

Typographic corrections

- Although “Nyamuragira” is equivalent to “Nyamulagira”, within the text, the authors should be consistent with the use of the name “Nyamulagira” as appears in the title of the paper (see page 10, lines 7, 9 and 25).
- Figures: 2, 4, 6, 8; all the frames. Please change “Km” to “km”. (According to the International System “k” is lower case).
- Page 2, line 24: Volcnaic → Volcanic

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- Page 6, line 18: NSA → NASA
- Page 6, line 23: Felection → Reflection
- Page 10, line 21: Nyamunragira → Nyamuragira
- Page 10, line 22: mush → must
- Page 10, line 23: stongly → strongly
- Page 12, line 6: Blegian → Belgian

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 3, 1835, 2015.

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