E. R. Stefanescu - corresponding author

- Q1 - OK

- Q2 - Department of Civil Engineering, Universidad de Nariño, Nariño, Colombia

- Q3 - Please replace the sentences starting line 311 with: *For sampling the input parameter space, a Latin Hypercube Sampling (LHS) was implemented. LHS is commonly used in computer sampling experiments McKay et al., Sacks et al., mainly because it is computationally cheap to generate and can cope with many input variables.*

- Q4 -OK

- Q5 - TOPSAR (Topographic Synthetic Aperture Radar)

- Q6 - Please use: *For any point in the domain, it can now be exercised like the simulator to get potential flows and hence exceedance probabilities.*

- Q7 - OK

- Q8 - OK

- Q9 - Ehlschlaeger, Ch.R., and M.F. Goodchild, 1994. *Uncertainty in spatial data: Defining, visualizing and managing data errors.* Proceedings of GIS/LIS, Phoenix, Arizona. pp. 246-53.

  Stefanescu, E.R. and Bursik, M.I. and Cordoba, G. and Patra, A. , Pieri, D.C. and M.F. Sheridan, 2010. *Impact of DEM uncertainty on TITAN2D flow model output, Galeras Volcano, Colombia.* Proceedings of International Congress on Environmental Modelling and Software. International Environmental Modelling and Software Society (iEMSs), Ottawa, Canada.

  Stefanescu, E.R., Bursik, M.I., Dalbey, K., Jones, M.D., Patra, A.K. and E.B. Pitman, 2010. *DEM uncertainty and hazard analysis using a geophysical flow model.* Proceedings of International Congress on Environmental Modelling and Software. International Environmental Modelling and Software Society (iEMSs), Ottawa, Canada.

- Q10 - Ehlschlaeger, Ch.R. and A. Shortridge, 1996. *Modeling elevation uncertainty in geographical analysis* Proc. Spatial Data Handling '96, Delft, The Netherlands, v. 2 (1996), pp. 9B.159B.2

  Heuvelink, G.B.M., Burrough, P.A., and A. Stein, 1989. *Propagation of errors in spatial modelling with GIS.* Int. J. Geogr.Inf. Syst. 3, 30332

- Q11 - M. Goldstein, 1995. *Bayes linear methods I - Adjusting beliefs: concepts and properties.* Technical Report 1995/1, Department of Mathematical Sciences, University of Durham.

  Sheridan, M.F., Patra, A.K., Dalbey, K. and B., Hubbard, 2010. *Probabilistic digital hazard maps for avalanches and massive pyroclastic flows using TITAN2D.* Geological Society of America Special Papers, 464, p. 281-291

  Weng, Q., 2002. Quantifying uncertainty of digital elevation models derived from topographic maps, Advances in Spatial Data Handling (D. Richardson and P. van Oosterom, editors), Springer-Verlag, New York, New York, p. 403418

- Q12 - OK

- Q13 - Stefanescu, E.R., Bursik, M. and A.K., Patra, 2012. *Effect of digital elevation model on Mohr-Coulomb geophysical flow model output*, Natural Hazards, doi:10.1007/s11069-012-0103-y

- Q14 - Please remove

- SQ1 - OK

- Line 310: Change to *One working hypothesis*

- Line 393: *... use of a hierarchical emulator.*

- Line 579: Change to *30° and 35°*.

- Line 680: Change to *TITAN2D*.

- Line 772: Change from Mountain Mountain to *Mammoth Mountain*.

- Line 780: Change to *In previous work ... footprint*

- Line 1012: Change to reference to:
  Hildreth, W. 2004, *Volcanological perspectives on Long Valley, Mammoth Mountain, and Mono Craters: Several contiguous but discrete systems*, J. Volcanol. Geotherm. Res., 136,169 198.