

# ***Interactive comment on “Inelastic compaction and permeability evolution in volcanic rock” by Jamie I. Farquharson et al.***

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The paper deals with a basic problem of volcanology, in particular the evolution of porosity and permeability of volcanic rock under inelastic compaction. Implications on magmatic degassing and occurrence of an explosive eruption are discussed. The study draws conclusions from laboratory experiments.

The paper is worth publishing after minor revision.

## **Minor Observations**

**P2L32** The authors could provide other references on volcanic cases of detection of inelastic compaction to enhance the importance of their study.

**P4L1** Which is the standard deviation or the experimental error for the estimated value of the mean of  $\rho_p$ ? The same for all experimental data that are reported further in the paper.

**P4L11-30** I expect that the temperature plays a major role in determining the inelastic behaviour of rock. Which is the temperature of the samples during the experiments? Is it compatible with the depths corresponding to the different confining pressures applied?

**P5L4** The verbs “are be” should be corrected, maybe only “are”.

**P5L10** Equation (2) should be explained in more details, or a reference for it must be given.

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Discussion paper

