Earth Surface
Dynamics
Discussions

Interactive comment on "Automated landform classification in a rockfall prone area, Gunung Kelir, Java" *by* G. Samodra et al.

Anonymous Referee #2

Received and published: 16 March 2014

General comments

The paper presents a landform classification technique based on DTM interpolated from a digitized contour map used to compute a set of morphometric parameters. Authors then derive a power law statistical relationship between the volume of the rockfall deposits and number of events associated with different landforms and apply the classification and rockfall volume statistics to rockfall risk analysis. Although the research is based on older type of data and standard techniques for derivation of morphometric parameters, the rockfall analysis is of great interest because it can be further developed to be applied with other types of elevation data (lidar, IFSARE) and provide important, regularly updated maps of rockfall risk areas.

The paper has many issues with language making it difficult to understand and review.

The language problems are too numerous to list, here are few representative examples:

p.23 l. 16: Thus, we try to automated classify landform

p.27 l. 20 The consideration to decide upon the number of final classification of landform elements and morphometric variable to be employed in the automated landform classification is essential.

p.34 l. 6 the depositional process of alluvium does not work in that such area.

Specific comments:

The first 3 paragraphs in intro can be substantially shortened as they are not relevant p.24 l.23-25 repeats a sentence from introduction

p. 25 l.16 contour interval of 12.5 in what units? When was the topographic map produced? Did the rockfalls changed the topography in a way that would not be reflected in an older topographic map? I might have missed it but I don't see information about the resolution of the DTM or was a TIN-based DTM used?

p.27 first paragraph belongs to intro and methods

p.28 l. 16 "rockfall velocity second derivative?" What is meant by second derivative here? (can be easily confused with second order derivative).

p.31 l.16 "The landforms which have higher order magnitude are lower slope, colluvial slope and transportational middle slope respectively." - magnitude of what? Volume?

p.32 l 12 - pose > predict? Automated landform analysis and rockfall statistic can pose the likelihood of rockfall

Tables and Figures

Table 2 is missing units (e.g. slope in % or degrees?)

Figures - at least approximate scalebar should be added to figures

For the curvatures in Fig 3 which color is 0?

C47