

Interactive comment on “Integrated dataset of deformation measurements in fractured volcanic tuff and meteorological data (Coroglio coastal cliff, Naples, Italy)” by Fabio Matano et al.

Anonymous Referee #1

Received and published: 11 October 2019

Manuscript: Integrated dataset of deformation measurements in fractured volcanic tuff and meteorological data (Coroglio coastal cliff, Naples, Italy).

Overview comments:

This research paper presents a dataset of deformation measurements carried out in five fractured volcanic tuff blocks at the Coroglio coastal cliff (Naples, Italy). Multiple tuff deformation parameters were obtained from crackmeters and tiltmeters during 4 years. These values were correlated with numerous meteorological variables from a weather station in order to detect possible relationships between the two data sets. It is concluded that (1) the deformation mainly increases if temperature increases and (2)

C1

fractures deform both synchronously and in a delayed way with temperature.

The work is well written and illustrated with figures and tables, and their conclusions seem to be consistent with the results of deformation measurements and their correlation with numerous meteorological variables. However, a restructuration of some parts of the paper is considered appropriate (see 'line-by-line commentary'). In some cases, authors included data, methods and results in the same section. Therefore, define independent sections for 'Data and methods' and 'Results' may be appropriate. On the other hand, the number of tables and figures seems excessive. Select the most relevant figures and tables to be included in the manuscript and put the rest in a 'Supplementary information' section.

General vote: manuscript may become acceptable after major changes, which are detailed in this review.

Line-by-line commentary:

Page 1, line 17: Freezing conditions in the southwestern coast of Italy? Page 2, line 6: It may be more appropriate 'mass wasting' instead of 'mass movement'. Page 2, lines 11-18: References indicated in these lines seem to be examples (indicate 'e.g.' before references). Page 2, line 25: 'relicts' instead of 'relics'. Page 3, line 23: It may be better to say 'structural instability'. Page 4, line 7: 0.07 m/yr in that time period? Page 4, line 12: Consider to define a 'Data and methods' section here with sub-sections (e.g., 3.1 The monitoring system, 3.2 Tuff deformation data, and 3.3 Meteorological data). Page 6, line 7: 'max-min value ranges' instead of 'max-min values'. Page 6, lines 7-32 and Page 7, lines 1-8: These lines correspond to 'Results' section. Page 6, line 11: code; 04F1? Page 6, line 18: Add a space between 'F2' and 'sensor'. Page 6, line 26: -0.20° and -0.30°. Page 7, lines 1-29: These lines correspond to 'Data and methods' section. Page 7, line 25: It suggests to define the expression 1 as $P_n = 0.613v_n^2$. Page 7, line 27: Replace '*' by 'Â' in the equation (i.e., $N\hat{u}m^2$). Page 8, line 8: ... the difference between the minimum and maximum temperatures (ΔT). Page 8, line 24:

C2

...daily values, probably associated with the proximity to the sea. Page 9, lines 9 and 10: Are these high rain rates associated with late summer storms? Page 10, line 12: The wind rose diagram. . . Page 10, line 13: . . .from the II and IV quadrants of the rose diagram. Page 12, line 11: ...(e.g., 0-0.54. . .)? Page 12, lines 13-15: Why authors do not use F19I3 too? Page 13, line 7: . . .acting on the cliff (e.g., F16F2).

Figures:

Figure 1: Add coordinate grid in Fig. 1a and indicate the source of the orthophoto in Fig.2b.

Figure 2: It would be recommendable to indicate upper, middle and lower parts in this figure.

Figure 3: Add x- and y-axis labels (i.e., Horizontal distance (m) and Elevation (m a.s.l.).

Figures 6-12, 22, 25-30: Add x- and y-axis labels. Define 'a' and 'b' in Fig. 15.

Page 34: Indicate the figure number.

Please also note the supplement to this comment:

<https://www.earth-syst-sci-data-discuss.net/essd-2019-139/essd-2019-139-RC1-supplement.pdf>

Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2019-139>, 2019.