

## ***Interactive comment on “Automated field detection of rock fracturing, microclimate, and diurnal rock temperature and strain fields” by K. Warren et al.***

**Anonymous Referee #1**

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In Earth sciences field experiments preceding numerical magic are always the best practice, especially in a complicated study of mechanical rock weathering processes. The idea of the experiment is good, very clear and original by its realization. Field measurements of acoustic emission caused by micro-cracking in the fully-controlled test object (the boulder) were carried out with great accuracy and specific attention to technical approaches, meeting all requirements from manufacturers of various sensors. It is important, that authors provide sufficient detail so that the experiment can be duplicated by future researchers. Technical aspects of the field experiment and the results are discussed in a balanced way with appropriate references. The manuscript is well

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structured and illustrated. This study may lead to advancements in our understanding of processes of non-tectonic rock fracturing in aerially exposed geological structures due to diurnal and seasonal changes of environmental conditions. The actual contribution is appropriate for publication in GI after some minor technical corrections. On page 381 the “double dot” following the “various materials..” should be replaced with a single dot. One more suggestion: in Fig. 6, since we have the 3D array of AE hypocenters, the third subplot (view from the top, for example) would be nice.

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