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## ***Interactive comment on “Strength constraints of shallow crustal strata from analyses of mining induced seismicity” by M. Alber et al.***

**Anonymous Referee #2**

Received and published: 29 August 2013

Dear authors, I think your paper demonstrates an interesting comparison between two mines in two different mining districts in Germany. Despite my inexperience with mining and computations of frictional strength, I could follow the paper and understand the reasoning behind and outcome of the numerical models. Especially, I found the figures to be very instructive. You will find most of my comments and corrections within the manuscript (using the Acrobat Comment tools) and they mostly constitute minor points. However, I can summarize as follows: - The paper would immensely profit from making more information available to the reader: where do values come from, how has the analysis been performed, which software has been used... Please remediate this. It should be obvious from my comments within the document. - The paper appears partly more as a project report than a paper... For example, could you formulate the open questions that you are trying to answer in the following more clearly at the end of

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the introduction? - Section 3.2 is quite unbalanced between mine A and B in terms of length of text and level of detail. - The discussion is a bit weak. Could you e.g. compare your results a bit more broadly against other examples from coal mining from around the world in the discussion? The two examples from Al-Saigh and Kuznir (1987) and Donelly (2009) seem a bit arbitrary. Also the comparison of the frictional strength in mine A and B to the strength of faults in California (Carena and Moder, 2009) seems arbitrary. Why did you choose those examples? Aren't there better suited ones? Or even better: discuss a range of values from different publications. - Especially, I think you are contradicting yourself in the discussion... At the beginning of the section, you are stating: "In the Ruhr area, most recorded seismic events are directly connected with the advancing working faces and show no evident connection to geological faults", whereas at the end, you are saying that "In conclusion, the strength constraints of shallow crustal strata as derived from the analyses of mining induced seismicity are mainly dominated by weak faults". Please clarify. - Can you summarize (e.g. at the beginning or end of the discussion) your findings shortly and clearly? - Although the text is written comprehensible, the wording/phrasing sometimes strikes me as a bit awkward, e.g. "the reason for the events" instead of "the cause for the events". Can you carefully read through the text again? (If possible, involve a native speaker.) - There are an increasing amount of slips of the pen with progress of the text ("strenge events" instead of "strongest events" and so on) – I am not sure if I caught everything, please check carefully. - Please check the placements of commas... I cannot help there much, since I am also not a native English speaker, but I am missing some... Sometimes, it also makes it easier to read a text if two parts of a sentence are separated by comma, even if a comma is voluntary and not required.

Best regards.

Please also note the supplement to this comment:

<http://www.solid-earth-discuss.net/5/C480/2013/sed-5-C480-2013-supplement.pdf>

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