Earth Syst. Sci. Data Discuss., referee comment RC1
https://doi.org/10.5194/essd-2022-196-RC1, 2022

Comment on essd-2022-196

Jochem Kück (Referee)

Referee comment on "In situ stress database of the greater Ruhr region (Germany) derived from hydrofracturing tests and borehole logs" by Michal Kruszewski et al., Earth Syst. Sci. Data Discuss., https://doi.org/10.5194/essd-2022-196-RC1, 2022

This data publication presents a long overdue collection, evaluation and synopsis of the available data on the stress field of the Ruhr area in Germany. Congrats!

It is important and necessary for diverse applications and future technical challenges in this highly industrialized agglomeration in the middle of Europe.

The stringent and transparent structure of the manuscript in general makes it easy to follow the process of data collection and quality assessment.

Nevertheless, for a better understanding of the workflow, I tried to reproduce the process of generating a few data points in this data compilation containing my own data (Haus Aden, 940 m bottom , Kück, 1988). I must admit, however, that I could not really reproduce the values that are ultimately shown in Table 2, lines 23 to 26 of this publication.

For one, the depth is given as 998 m but actually it was the 940 m level (Hauptquerschlag der 940 m Sohle).

Could it be the stress relocation effect of the cavity of the gallery was not considered, because it seems always the highest stress values were chosen no matter at which distance to the gallery wall these were measured?

In line 23 (vertical borehole B2V) I can recognize the average Shmin of 14.2 MPa and the SHmax of 25.4 MPa, where always the maximum occurring value given in the Diplomarbeit is 23-26 MPa was used.

In line 25 (vertical borehole B4V) the SHmax = 21.3 MPa, but in the Diplomarbeit the highest SHmax value is 14 MPa only.

Long story short: I assume that the values given in the publication were correctly determined by a procedure that I simply cannot resolve.

Some very few more corrections I noted in the attached PDF file and I also added some doi links that were missing.

Please also note the supplement to this comment:
https://essd.copernicus.org/preprints/essd-2022-196/essd-2022-196-RC1-supplement.pdf