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Discussions

Interactive comment on "Roadway backfill method to prevent geo-hazards induced by room and pillar mining: a case study in Changxing coal mine, China" *by* J. Zhang et al.

Anonymous Referee #1

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Many geo-hazards associated with room and pillar mining, such as pillar failure and bursts. This paper presented an effective way, i.e. roadway backfill method, to resolve these issues. Overall, this paper was well-written in general and flows well. However, a few points have not been well presented or not clear enough, thus need to be improved. Main comments are: 1) Page 3, line 70: Why the authors use aeolian sand and loess as the backfill materials? Is there any reference? 2) Table 1: check if "ratio of loess" is right, I think this should be "loess". 3) Section 5.1.1. the selection of the modeling dimension was not justified. Need to explain whether or not the model is large enough to cover the whole zone of influence. 4) Section 5.1.2: In scheme 2 (i.e. Scenario 2), the pillar information was not given, please provide. 5) Figure 5 is hard to understand.

Please make sure all parts all clearly explained/given. Replace 'Open-off Cut' by 'cut off'. 6) Page 6, line 161: Eq. (1). How was the 'Average compressive stress' calculated? Average all principal stresses? Average the first principal stress? Or average vertical stress? It's not clear. Another question is that when the average value is used, it may result in the overestimation of pillar stability. For instance, the pillar along the opening has already been yield, but this cannot be reflected when the average value is used. Suggest authors explain this in the context.