

No.	The comments	Our responses
1	In this paper, Newmark method is applied for the study of Ludian earthquake event, and two innovations are introduced to this method. (1) using Baron model to calculate F_s and a_c ; (2) using CF method to calculate the slope failure probability in the Ludian earthquake.	We appreciate your valuable comments and suggestions.
Specific comments		
1	Line 46 the introduction is not sufficient. There is a lack of current research about Newmark, the purpose of this study and the problems to be solved in this paper.	Thanks for this good suggestion. Yes, changes were made in the revision, see Line 51-72.
2	Line 51 Please add the relevant references about Barton model.	Thanks for this kind remind. Yes, changes were made in the revision as suggested, see Line 61, 65.
3	Line 78 is the landslide inventory from previous study? If it is, please add the references. If not, please give the brief introduction about the information of pre and post-earthquake images (such as images name and resolutions) and interpretation methods.	Thanks for this good suggestion. The landslide inventory is carried out by visual interpretation method through comparison between pre-earthquake satellite images from Google Earth and 0.2m-high-resolution post-earthquake aerial images. Changes were made in the revision as suggested, see Line 92-96 in the revision.
4	Line 95 F_s need subscript.	Thanks for this kind remind. Yes, changes were made in the revision as suggested, see Line 115, 116, 134, 150 in the revision.
5	Line 147 add the relevant reference and give a brief description.	Thanks for this kind remind. Yes, changes were made in the revision, see Line 179-181.
6	Line 166 How many cells about static factor of safety less than 1? If it is larger than 5% of the total area, it is not appropriate. Otherwise, the	This is a good comment. 17% of the map has $FS < 1$. This is probably because We assigned the original shear strengths to the geologic

	<p>0.09 is too small, what is the reason for such a small value? Please explain the reason.</p>	<p>units other than increasing strengths to make statically unstable cells stable as Jibson et al. (1998, 200) did. What Jibson et al. did changes the statically stable level of the whole area, especially the slopes on the boundary at first. In addition, we considered size effect of the potential slide surface, this would yield lower F_S, which, in turn, yield higher displacement (Line 339-346 in the revision). However, calibration with the actual inventory of landslides can fix this problem (Line 336-346). For another reason, for some steepest slopes (usually more than 60°), the shear resistance between the block and the sliding surface does not work anymore in Newmark's sliding block model. No block can stay on that steep sliding surface, and the calculated FS will be nearly zero in this case. Therefore, we assigned an angle (α) that the complementary of $45^\circ - \frac{\phi_b}{2}$ to those slopes more than 60° to avoid a too low FS from Newmark analysis in the revision, see Line 168-176.</p>
7	<p>Line 229 Normally, the larger the D_n value, the larger the $P(H/E)$ value is and the larger the CF value is, the more tending to 1. So is CF method appropriate? I think Weibull curve might be more appropriate. Or would you like to show more evidence? Since there are Newmark values and landslide inventory of Ludian earthquake, why not fit Weibull curve. (Jibson, R.W.; Harp, E.L.; Michael, J.A. A method for producing digital probabilistic seismic landslide hazard maps: An example from the Los Angeles, California, area. <i>Engineering Geology</i> 2000, 58,</p>	<p>This is a good comment. The relation between D_n and $P(H/E)$ is not strictly follow this rule, but the relation between $P(H/E)$ and CF follow this tendency as shown in Fig. 17 in the revision. Actually, Weibull curve is just fitting the relation between D_n and $P(H/E)$, which is part of CF. Different from a Weibull curve (1939) through statistical regression, whose shape would probably be different in different regions (Jibson et al., 1998, 2000), the piecewise function of CF value and the proportion of landslide area can be derived from Eq. (9). So, the CF method is more universal, see Line 265, 313-320 in the revision.</p>

	271-289.)	
8	Line 267 I am confused with this word. From Fig. 15, we find that when the Dn is about 60 cm, the area is the largest. That means the study area is more susceptible to the landslide types with larger displacement rather than shallow falls and slides with small displacement. This is inconsistent with the facts.	<p>This is a good comment.</p> <p>Actually, 60cm is only half of the maximum displacement value. Displacements less than 60 cm occupy about 80% of the study area. Therefore, we conclude that the study area is more susceptible to the landslide types with smaller displacement. Changes were made in the revision, see Line 296-300.</p>
9	Line 282 I thought fig.16 is meaningless. What is the significance of establishing a functional relationship between area and CF values in different CF interval? In addition, do you use median, maximum, minimum or average values of CF for each interval?	<p>This is a good comment.</p> <p>The purpose of this figure is to make a comparison with Weibull curve presented by Jibson et al. (1998, 2000). Weibull curve is carried out by statistical regression, the shape would probably be different in different cases. But function of CF and proportion of landslide area is derived from equation of CF model, do not need statistical analysis, which means it won't change with different cases, so this functional relationship is universal, see Line 313-320.</p>
10	Line 514 Please give the stations distribution of the fig.15 and a brief information. In addition, the accuracy of PGA obtained by inverse distance interpolation needs to be verified. Why not use other interpolation methods (Dreyfus, Daniel Kenoyer, 2013, The influence of different simplified sliding-block models and input parameters on regional predictions of seismic landslides triggered by the Northridge earthquake, Engineering Geology in this article, they use Kriging interpolation). In addition, since you have station records, it will be better if you use Arias intensity.	<p>Thanks for this good suggestion.</p> <p>Yes, changes were made in the revision. The position of the 23 stations is shown in Fig. 12 in the revision, see Line 602-603, and the PGA data is listed in Table 2 in the revision, see Line 644-645.</p> <p>We think that the calculation principle of Inverse Distance Weighted (IDW) interpolation algorithm is similar with the attenuation of seismic waves. This method assumes that the variable of the average PGA being mapped decreases in influence with distance from its sampled location. When the number of reference points is enough, Inverse Distance Weighted interpolation usually yields better results than Kriging interpolation. For this case, both</p>

		<p>interpolation algorithms have no big difference.</p> <p>Because our station records only include three components of the peak ground acceleration (<i>PGA</i>), not acceleration-time history.</p>
Other comments		
1	<p>There are few articles about the Ludian earthquake landslide, especially about the Newmark aspect of the Ludian earthquake. Please add the relevant references and make a brief discussion.</p>	<p>Thanks for this good suggestion.</p> <p>Yes, changes were made in the revision, see Line 53-59 in the revision.</p>
2	<p>In this paper, compared with the traditional <i>Fs</i> calculation method, the author introduces Barton mode. Whether the author compares the difference between the two calculation methods and makes a quantitative comparative analysis is necessary, as well as a brief qualitative discussion.</p>	<p>Thanks for this good suggestion.</p> <p>Yes, changes were made in the revision, see Line 347-360.</p>
<p>Finally, we deeply appreciate the time devoted by the reviewer to the review process. Your constructive comments are invaluable to the improvement of our manuscript.</p>		