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Discussions
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Interactive comment on "Landslides distribution at tributaries with different evolution stages in Jiangjia Gully, southwestern China" *by* Xia Fei Tian et al.

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1)The data has been checked and modified. As two topological surfaces overlap and form a slight superposition, all the topological surfaces of the landslides were checked and modified. 906 landslides have been identified, with area ranging of 2.53 $\times$ 102 $\sim$ 6.7 $\times$ 105 m2. The tables and figures were remade. 2)General application of EI for landslide source identification The case study in JJG provides a relationship between EI and landslides distribution; the traditional methods make a comprehensive analysis of various influencing factors of landslides (Amashi et al., 2019; Baena et al., 2019; Ciurleo et al., 2019; Hu et al., 2019; Rao et al., 2017; Singh et al., 2019; Xie et al.,

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2015), ignoring the landslides distribution mechanism itself, while this paper focuses on the analysis of the landslides distribution state itself in tributary, so this method can be generally applied to identify landslide sources in more general cases. For example, the Wenchuan earthquake has about 11,000 individual landslide points (Gorum et al., 2011), and it is found that these landslides are distributed mainly in relatively high EI tributaries (Tian et al., 2019; Xiang et al., 2015). The EI values for the landslide sources are also subject to the Weibull distribution (Fig. 16), which is similar to the case of JJG. In comparison, in JJG, EI of tributaries satisfies the Weibull distribution with the scale and shape parameter for JJG case are respectively of 0.02 and 1.69, while for, this is comparable to the EI distribution of tributaries in the Wenchuan region where the scale and shape parameter is 0.53 and 11.73, respectively. The scale parameter can reflect the EI range of variation, which varies between 0.38 and 0.64 in the Wenchuan area and betweenem 0.37 and 0.73 in JJG. The difference here can be attributed that a number of tributaries in JJG having no landslides, while in Wenchuan, only tributaries having landslides distribute in almost every tributary are taken into account, which means the concentration of EI. This also implies that landslides occur in tributaries within a relatively narrow range of EI. More important point is the difference between shape parameters, the bigger shape parameter in Wenchuan region means that the curve is to the right more than in JJG, implying that the earthquake is inclined to induce more landslides in tributaries of big EI. As JJG is of tributaries with wide range evolution stages, we choose it as the study area to reveal the mechanism of landslides distribution.

Fig. 16 The EI frequency distribution of Wenchuan in Sichuan province. 3)We had added new text and figures to express clearly, and the coordinate was added in the figures.

Please also note the supplement to this comment:
https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2019-90/nhess-2019-90-AC3-supplement.pdf

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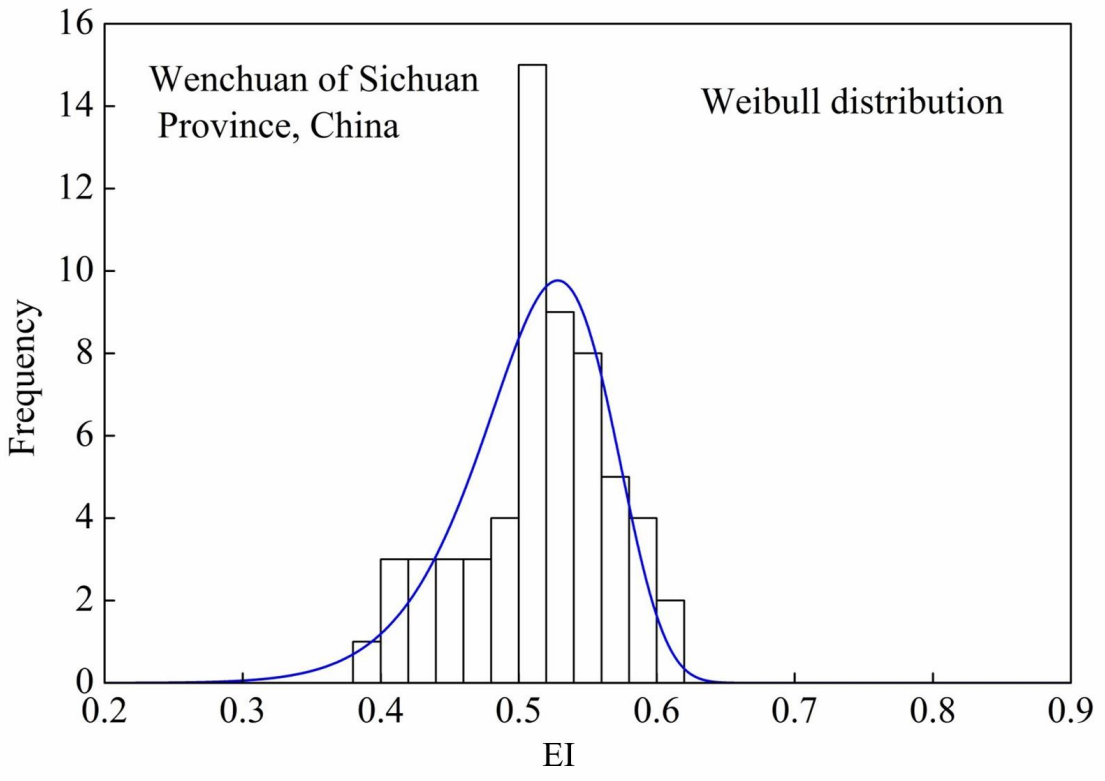

Fig. 1.

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