

Interactive comment on “A model for interpreting the deformation mechanism of reservoir landslides in the Three Gorges Reservoir area, China” by Zongxing Zou et al.

Anonymous Referee #2

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The subject manuscript, "A model for interpreting the deformation mechanism of reservoir landslides in the Three Gorges Reservoir area, China" is an important case study of a large, deep landslide that has been affected by reservoir impoundment and fluctuations. The manuscript is logically organized, well written and presents a long record of data relating landslide movement, reservoir levels, and precipitation.

My primary criticism of the paper is that the authors seem to be unaware of previous studies that have presented similar, closely related models to that presented in sections 2.2 and 2.3. Although most previous work cited in the following lines does not specifically address reservoir effects on landslides, the relationships between land-

C1

slide geometry, deformation, dynamics, and stability identified in previous studies is relevant to the case presented in the subject manuscript. The model has concepts in common with the wedge method for analyzing landslides consisting of an active driving wedge and resisting block (Terzaghi & Peck, 1967; Sultan and Seed, 1967). Hutchinson (1984) presented an "influence-line" approach for assessing effectiveness of cuts and fills in stabilizing slopes, which is also similar to the models in sections 2.2 and 2.3. Iverson (1986) described relationships between stress distribution and landslide geometry. Baum and Fleming (1991) described the relationship between displacement patterns and the results of stability analysis, and derived expressions for the boundary between driving and resisting elements of landslides. Interestingly, they concluded that the boundary is near the thickest part of the landslide, consistent with the findings of this manuscript. Drawing on insights gained from these earlier studies, McKean and Roering (2004), Guerriero et al. (2014), Prokesova et al. (2014), and Handwerger et al. (2015) as well as others, have further explored the influence of slip-surface and landslide geometry on slide deformation, force distribution and landslide dynamics.

In addition to strengthening the background section/literature review to show the relationship of the authors' model to previous work,

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C2

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