

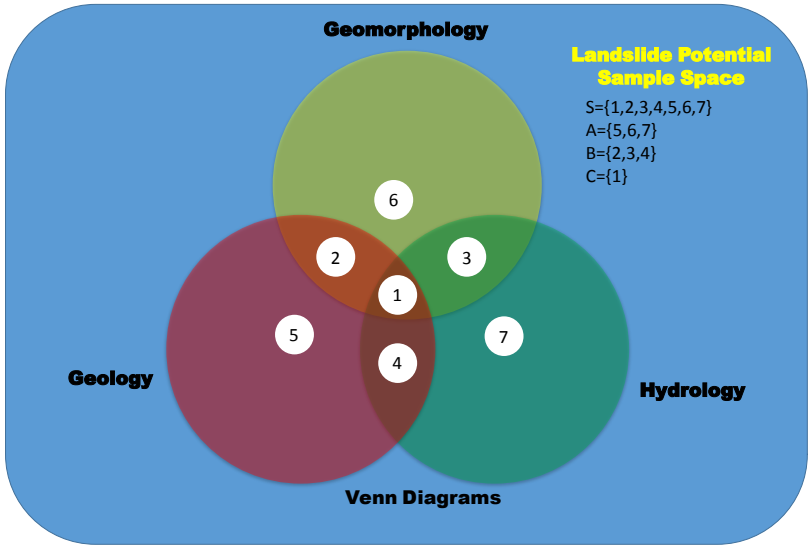
A m e n d m e n t s t o P r o o f (R e v i e w e r # 3) D a t e : 2 0 1 6 / 0 8 / 2 4

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Paper Title: **Evaluation of Environmental Factors in Landslide Prone Areas of Central Taiwan using Spatial Analysis of Landslide Inventory Maps**

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1			-	the spatial resolutions of SPOT5 and FORMOSAT-2 are not identical. This might create some sort of inconsistency between classification results from different satellite.	<p>Thanks for the comments.</p> <p>This study select satellite imagery sources that its acquisition date should be close to disaster events for reflecting real geomorphological change. So, all of the satellite imagery sources could not be identical or provided by single satellite data acquisition system. Of course, SPOT series and FORMOSAT-2 satellites had different spatial resolutions. To deal with the problem, this study collects and uses aerial photo close to the event-based landslide inventory to which systematically improves the quality of data content and data structure so that it can definitely promote accuracy and reduce inconsistency between classified results from different satellites</p>
2				The second is about the minimum unit size of UCU. This involves the MAUP issue.	<p>Thanks for the comments.</p> <p>This study resamples source data layers to the same resolution to reduce zone effect during executing spatial analysis to reduce the effects of UCU involved MAUP issue.</p>
3				The last and the most concern is the “Landslide Potential Map”. This is the major contribution of this paper, low, moderate and high landslide threat classes. The authors should provide more details about how these three classes are defined	<p>Thanks for the comments.</p> <p>Regarding to the principle of classification of “Landslide Potential Map, one could use the concept of Venn Diagrams to explain the definition of low, moderate and high landslide threat classes. A Venn diagram (also called a set diagram or logic diagram) is a diagram that shows all possible logical relations between finite collections of different sets which can illustrates simple set relationships in probability. In this study,</p>

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					<p>there are the three sets of environmental factors which is a combination of geomorphology, geology, hydrology to dominate landslide contribution within the study area. A Venn diagram of these three sets in S region (landslide potential space) could be illustrated as below</p>  <p>In this figure, there are seven relationships among these three set in landslide potential space. Based on the Venn diagram, one can calculate the landslide probability of a given event to qualitatively represent the landslide potential as low, moderate and high. Namely, landslide probability is getting higher which the landslide area has higher potential.</p> <p>Case 1 :Only one set without intersections (Event A) will trigger the landslide probability as calculated</p> <p>The probability of Case 1 is equal to $\frac{3}{7}$</p> <p>Case 2 : Intersections of each two sets (Event B) including Event A will trigger the landslide probability as</p>

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					<p>calculated</p> <p>The probability of Case 2 is equal to $6/7(=3/7+3/7)$</p> <p>Case 3: Intersections of three sets (Event C) including Event A and Event B will trigger the landslide probability as calculated</p> <p>The probability of Case 3 is equal to $7/7(=3/7+3/7+1/7)$</p> <p>According to the calculated results of landslide probability, Case 1, Case 2 and Case 3 will be defined as low, moderate and high landslide potential classes.</p> <p>For avoiding misunderstanding, the authors will rewrite and add more detailed definition about the principle of classification of "Landslide Potential Map" in the revised manuscript.</p>