

General Comments:

This manuscript introduces an interesting method for the early detection of landslides using time series of radar coherence ratio, intensity ratio and NDVI ratio. This manuscript is well arranged and the results from this case are sound. However, in my mind, two issues should be highlighted, the first is what the basic theory is behind the coherence lost, intensity lost and even NDVI lost with respect to the surface deformation. The Second is whether you can give the thresholds for the coherence ratio, intensity ratio and NDVI ratio as the precursory information to early warning the failure of slope? Actually, the coherence lost and intensity lost are mainly due to the large surface deformation. In other words, surface deformation can give us much direct information with respect to the failure of landslide. In a word, to which extent, this strategy can be referred for the similar landslides application?

1. Besides, once the time series of displacement shows an accelerating trend, we should take more attention and take special measures if applicable to prevent the hazard. Actually, it is very hard to forecast the failure of landslide if only satellite SAR data are considered.
2. Taking NDVI as an indicator may not work when landslide occurs in area with barn vegetation cover. And the heavy vegetation is a big problem for SAR data processing. So how does NDVI can be applied regarding the landslide detection and monitoring?

Specific Comments:

1. Study site section: the description of the Mud Creek landslide is not clear, please add a description about the scope of the landslide, such as length, width, thickness, etc., which can also be depicted in Figure 1 to an enlarged map of landslide.
2. Line 79: a word is incorrect, change “us” to “use”.
3. Lines 97-100: the numbers of ascending and descending SAR images are 35 and 42 respectively, so, what do the numbers “51” and “64” in lines 97-98 mean?
4. In Fig. 5b, in April 2017, the time series of deformation marked by Pentagon appeared rebound, is there any unwrapping error?
5. Figure 5: the deformed area is similar to the low-coherence area pattern, and the NDVI ratio lost in the meantime. So how can you conclude the coherence lost was due to slope movement rather than vegetation variation? The more analysis on this aspect is necessary.
6. In Figure 7, the amplitude ratio of ascending orbit is relatively discrete, and the descending orbit is concentrated. What is the reason?
7. Table 1: this table is in “Radar data” section, but the information of optical images is also shown in this table, I advise the authors to move this part to section 3.2.