

Report #1

This is a much improved version of the manuscript, with all of the main issues resolved from my initial review. Please see below for a list of a few technical/typographical revisions to help improve the English in the manuscript.

Line 32: Remove the 's' at the end of 'infrastructure'

Line 32: Change 'losses of lives' to 'loss of life'

Line 34-35: Change to 'supposed to have flooded'

Line 36: Change to 'Besides causing socio-economic havoc, LLFs have also long been...'

Line 43: Remove 'that'

Line 66: Change 'als' to 'asl'

Line 91: Change '12nd' to '12th'

Line 106: Change to 'The uncertainty associated with the manual measurements of active channel width is one pixel...'

Lines 118-119: Consider removing the whole sentence beginning 'This means that peak...', as it is repetitive of the previous sentence

Lines 119-120: Consider removing this final sentence of the paragraph, as it reads like interpretation/discussion that is usually kept separate from the Results section.

Line 126: Consider changing 'four hillslopes are slipping' to 'four hillslopes slipped, and their movement appears to be ongoing'

Line 149: Change 'propagated up hillslope' to 'propagated up slope'

Response to reviewer #1: All above suggestions has been accepted and the manuscript has been further improved by a language editing service.

Report #2

I appreciate the attention that the authors gave to the reviewer comments and their efforts in revising the manuscript. My concerns have largely been addressed, but there are still some writing and presentation issues that need to be resolved. First, while the additional information about the methods is useful, there is a lot of repetition in the description. In lines 70-80, you twice talk about the use of a reference and target image, and twice introduce the transformation to the frequency domain. Similarly, in lines 95-100, you repeat that uncertainties are estimated using a stable zone. In general this information could be organized better and presented more clearly. Second, the grammar and English usage also need improvement throughout the manuscript.

Response: For lines 70-80, the sentences "Sub-pixel changes are detected by using phase changes in the frequency domain" and "The principle of the method is to compare the difference in the reference image and the target image" has been removed.

The order of the sentences in the paragraph have been rearranged. The paragraph has been changed from

"We used the coregistration of optically sensed images and correlation (COSI-Corr) method to derive subpixel horizontal slope deformation in Sentinel-2 image pairs (Leprince et al., 2007). The COSI-Corr method is a pixel matching method. To detect surface deformation, the method uses two images at a time, an earlier reference image and a later target image. Both images are transformed from the spatial domain to the frequency domain using the Fourier transformation (Leprince et al., 2007). Sub-pixel changes are detected by using phase

changes in the frequency domain. Using the reference image from the earlier time, ground deformation can be derived from the target image in the later time. The principle of the method is to compare the difference in the reference image and the target image. There are two correlator engines to perform the procedure: The frequency and the statistical. The frequency correlator transforms the images into the Fourier domain and detect sub-pixel surface changes in the phase images, whereas the statistical correlator compares changes in the spatial domain (Leprince et al., 2007). The frequency correlator is more accurate to detect surface changes than the later correlator and is used in this work." (the previous version)

to

"We used the coregistration of optically sensed images and correlation (COSI-Corr) method to derive subpixel horizontal slope deformation in Sentinel-2 image pairs (Leprince et al., 2007). The COSI-Corr method is a pixel matching method. There are two correlator engines to that perform the procedure: Thethe frequency and the statistical engines. The frequency correlator transforms the images into the Fourier domain and detect sub-pixeldetects subpixel surface changes in the phase images, whereas the statistical correlator compares changes in the spatial domain (Leprince et al., 2007). The frequency correlator is more accurate to detectin detecting surface changes than the later correlator and is used in this work (Leprince et al., 2007). To detect surface deformation, the method uses two images at a time, an earlier reference image and a later target image, both of which are transformed to the frequency domain. Using the reference image, ground deformation can be derived in the target image." (the revised version)

For lines 95-100, the sentence "Uncertainties in this method are often estimated by selecting a stable zone (Yang et al., 2020b)" has been removed.

The manuscript has further been edited by a professional language editing service (please refer to the marked manuscript for details).

I also find the appendices kind of confusing. This is a pretty short paper, and these are very short additions, so why not just include this information in the paper? That being said, I don't see the point of the earthquake appendix – you don't ever refer to it, so why is this there?

Response: The earthquake appendix has been removed and the other two short appendices have been merged to the main text.

line 78: is there a reference for this statement?

Response: We added the reference (Leprince et al., 2007) to support the claim.

line 82: 64 and 32 what? Pixels?

Response: We added the word "pixels" here.

Line 141: since when?

Response: we added the words "the second (Baige) flood" here.

Line 172: the risk would be higher than what? This is also pretty repetitive – making the same point as the previous sentence.

Response: This repetitive sentence has been removed.

Figure 6: the y-axis is still labeled incorrectly

Response: The label of the y-axis has been changed to "the active channel width".