We are thankful to Reviewer #2 for the time he spent to evaluate our work. We do appreciate his positive suggestions to improve our work.

We took into account all the comments and we improved the manuscript accordingly. We also performed miscellaneous editing in the new version of the manuscript. Here, we reply to the all the suggestions for improvement made by Reviewer 2. Our reply are in bold typography.

Reviewer 2.
The letter proposes the use of InSAR and offset tracking techniques on Sentinel-1 SAR data to monitor landslides in a vegetated area (Reunion Island). The work is interesting and suitable for publication in this journal, in the following detailed comments are provided.

Authors: we are thankful to the reviewer for the positive comments and the suggestions for improving the manuscript.

Reviewer 2.
As a general point, the quality of the figures should be improved, as they appear blurred.
Authors: this might have been a visualization issue. We have tried to improve the image resolutions as suggested by the reviewer –even though they match the journal requirements in terms of DPI.

Reviewer 2.
Page 6, the authors state that "The OT technique is nominally less affected by temporal signal decorrelation than the InSAR technique. Therefore, we used all possible image couples, leading to the creation of 351 correlograms in both range and azimuth directions. Then, we applied a stacking procedure to create one velocity map in the range direction and one in the azimuth direction." Is the matching identical for all couples? In other words, how is it ensured that the same points are identified for all image couples? And how are the offset values related to the matching point couples combined into one velocity map? A more detailed description of the algorithm should be provided.

Authors: we thank the reviewer for pointing these issues. In the new version of the manuscript, we have improved this paragraphs according to the suggestions made by the reviewer. In the "Data and processing Steps", we added this new paragraph describing the general approach for the stacking procedure, for both unwrapped InSAR phases and OT correlograms:

For the unwrapped phases:

The stacking procedure starts from a set of unwrapped interferometric phases along with the time interval in days of the SLC-2 relative to the reference SLC-1. The individual unwrapped interferograms are weighted by the time interval in estimating the rate. The underlying assumption is that atmospheric statistics are stationary for the set of N interferograms. The formula for the estimated phase rate is given by:

$$phase\ rate = \frac{\sum_{j=1}^{N} \Delta t_j \varphi_j}{\sum_{j=1}^{N} \Delta {t_j}^2} \quad (1)$$

Where *N* is the number of interferograms, φ_j is one given interferogram, *t* is the time interval inherent with each interferogram (SLC-2 relative to the reference SLC-1). If the matching is not found (low signal coherence), that particular interferogram value is not used in the stacking procedure. So that the same scatterers are identified on many images, but not all the images are

used. It follows that the more the images, the more the stacking redundancy, the more the precision of the results.

For the Offset tracking:

Then, we applied the stacking procedure described above, to create one velocity map in the range direction and one in the azimuth direction. Instead of the unwrapped InSAR phases, we used the pixel offset values from OT correlograms. As for the InSAR phases, if the matching is not found, that particular correlogram value is not used in the stacking procedure. So that the same ground patterns are identified on many images, but not all the images are used.

Reviewer 2.
Page 7. "Second, we can see a clear pattern of ground motion in the Hell-Bourg area, approximately ± 0.5 m/yr and spatially consistent with ground observations.". The pattern of the Hell-Bourg area looks also quite complex and stating that it is "± 0.5 m/yr" may induce the reader that values are either +0.5 or -0.5 m/yr. It should be specified that ± 0.5 m/yr is the interval of values.

Authors: we thank the reviewer for pointing these issues. In the new version of the manuscript, we have improved this paragraphs according to the suggestions made by the reviewer.

Reviewer 2.
Page 7. "In this study, the InSAR signal was surprisingly coherent with a certain level of noise.". This is an interesting result, but should be justified by showing the InSAR coherence map.
Authors: we agree. In the new version of the manuscript, we have added a coherence map according to the suggestions made by the reviewer.

Reviewer 2.
The azimuth and LOS OT velocity maps are shown in Figure 3. These maps have a uniform spatial sampling. However, the image matching techniques usually yield a nonuniform grid. Is this true also in this case? If so, was the spatial grid interpolated?

Authors: In this study we performed the OT measurements on a regular grid (1024 x 1024 measures, in azimuth and LOS directions), on the co-registered SLCs images (radar geometry), before orthorectification. This yields a uniform spatial sampling, in radar geometry. The interpolation comes during the orthorectification process –in order to keep the regular sampling on the final map.
We added this sentence in the new paragraph, page 6.

Reviewer 2.
The notation in equation (1) is not very clear and should be improved using symbols. This applies also to Figure 4.
Authors: we modified the paragraph as well as figure 4. Now it reads :

Therefore, we applied :

$$|v_h| = \sqrt{OT_{AZ} + (OT_{LOS}/sini)^2}, \quad \textbf{(2)}$$

to extract the horizontal velocity map, $|v_h|$, where i is the satellite viewing angle (37° in this case study), OT_{AZ} is the azimuth OT and OT_{LOS} is the range OT (Figure 4).