

Specific comments

I.20 : Shugars et al.2021 refers to Chamoli disaster, which corresponds rock and ice avalanche, which was transformed in a debris flow downstream. It's not really a landslide which fall into lakes causing a GLOF. Could you clarify ? Perhaps, you wanted to mention the Sikkim flood here (Sattar et al., 2025)

I.42 : it could be better to chose between small baseline subset and Small BAseline Subset (SBAS) instead of Small Baseline Subset. Moreover, the paper of reference is usually Berardino et al. 2002 which is the first paper about SBAS. P. Berardino, G. Fornaro, R. Lanari and E. Sansosti, "A new algorithm for surface deformation monitoring based on small baseline differential SAR interferograms," in IEEE Transactions on Geoscience and Remote Sensing, vol. 40, no. 11, pp. 2375-2383, Nov. 2002, doi: 10.1109/TGRS.2002.803792.
keywords: {Monitoring;Synthetic aperture radar;Interferometry;Decorrelation;Singular value decomposition;Sampling methods;Information filtering;Information filters;Remote sensing;Satellites},

I.43 you could derive azimuth and range velocity. Perhaps, you could precise : it's possible to derive 2D displacement field, for example vertical and east-west displacement component (Tofani et al)

I.50 FT is also a traditional remote sensing technique now. It could be better here to reformulate, with something like « The gaps left by InSAR and DEM differencing. »

Table 1 :

- why did you write Subpixel (GPU) for autoRIFT ? It is also a subpixel NCC.
- GDM-OPT also has a service for glacier velocity and earthquake, which are respectively ICE and ETQ. See : <https://en.poleterresolide.fr/on-demand-processing/#/optic>
- If you mention the github of Aati et al 2022 it's more accurate to write COSI-Corr3D, and you should probably remove the (3D) after general. Remember that COSI-Corr is from Leprince et al 2007
- GIV use a NCC FFT no?
- Are sure COSI-Corr is not subpixel ? Same for PyCorr.
- Could you clarify in the legend what do you mean by partial, and general ? It would be clearer for the reader.

L. 60 You are mentioning automated image acquisition and cloud-based processing, but it's not discussed in the Table. You could add a few sentences here to highlight that these algorithms rarely support these two characteristics.

I. 65 « TerraTrack leverages the Google Earth Engine API and processes Sentinel-2 Level-1 data to automatically download and pre-process images before computing displacements using various FT techniques » this sentence sounds weird... could check it ?

I. 115 Do you think the Level of the S2 images which have been used could change the quality of the displacement maps?

Section 3.1 Optical images can be really impacted by shadows, this can introduce seasonal artefacts. How do you deal with that?

L.138 Optical flow could be also sparse, see for example :

https://docs.prophesee.ai/stable/samples/modules/cv/sparse_flow_cpp.html

I think it would be better to explain here that there are different types of optical flow method, see Barron, J., Fleet, D.J., Beauchemin, S., 1994. Performance of optical flow techniques. *International journal of computer vision* 12, 43–77. Is Farneback method a differential optical flow ? Is the Aperture problem sloved using a local and global regularization term?

It would be helpfull to better understand the differences with GeFolki which has been already used over landslides and glaciers, see for example

Provost, F., Michéa, D., Malet, J. P., Boissier, E., Pointal, E., Stumpf, A., ... & Bally, P. (2022). Terrain deformation measurements from optical satellite imagery: The MPIC-OPT processing services for geohazards monitoring. *Remote Sensing of Environment*, 274, 112949.

Charrier, L., Godet, P., Rambour, C., Weissgerber, F., Erdmann, S., & Koeniguer, E. C. (2020, September). Analysis of dense coregistration methods applied to optical and SAR time-series for ice flow estimations. In *2020 IEEE Radar Conference (RadarConf20)* (pp. 1-6). IEEE.

I.144. Could you justify here why did you not include NCC in the spatial domain, wherease it is probably the most used chip matching technique? I guess it's because of the computational time?

L.168 Could you give more information about SNR and PKR? (references and/or definition)

L.183 Why is it a 1D filter and not 2D?

L. 205 Could you give some reference here : « The resulting masked median velocity map can optionally be corrected for slope angle effects, under the assumption of a vertical satellite viewing angle. »

L.215 It's different from the approach developped in GIV, right? Why did you decide not to have iterative approach in this case ?

L. 221 Is it a SBAS like approach? if yes you should mention it.

L. 225 How did you force the solution to be at a chosen temporal resolution ?

L. 259 you could add « i.e. 49min » : easier to read.

L.305 Is the inverse velocity method implemented ? If yes, it would be great to describe it in the method part, and the Figure 1. It will be logical since it's one of the final goal of the processing chain.

L. 365 Could you discuss the possibility to use TerraTrack for other objects such as earthquake and glaciers. It has not been designed for that, but could it still be used ?

Typo comments

I. 48 there is a empty parenthesis here