Introduction : Here you need to mention current state-of-the-art fusion algoritms

Charrier et al., 2025 : https://doi.org/10.5194/tc-19-4555-2025, 2025.

Greene et al., 2021 : https://doi.org/10.5194/tc-14-4365-2020

Derkacheva et al 2020 : https://doi.org/10.3390/rs12121935

l. 128 : do you convert range/azimuth to E-W / N-S component ? if yes, it needs to be specified

Fig. 2 : why are you resampling the images ?

l.174 why 1.5 or 0.5 ? why not (annual mean + 2 std mean) which is the zscore ?

eq 1 is not a weighed least square because you did not weight the residuals. There is also a problem in the summation : it should be over i and j.

Eq 1 do you have one weigth for the entire time-series of each sensor ?

l. 205 Why are you filling the gaps based on Sentinel-1 velocities mainly (even with the enhancement factor) ?

l. 220 clouds are also present in Landsat images

l. 224 the enhancement factor is used only for Nodata no ? why do you say that sentinel-1 contribution is further modulated by the enhancement-coefficient ?

Fig4 . why do you still have gaps after the enhancement-based infilling ?

Fig 5. What's the unit of the axes ? You need to explain why ITS_LIVE have variance than your fuse products : because you used the annual product probably.

Fig 6. Same what's the unit of the axis ?

l. 345 could you precise the null hypothesis that you have tested here ? is it the one for scipy ? https://docs.scipy.org/doc/scipy/reference/generated/scipy.stats.pearsonr.html

Fig 12 : here there is no way of deciding if the trend is significant or not. For that, you need to perform a null hypothesis test, as done in Halas et al : https://doi.org/10.1016/j.rse.2022.113419

In the section just after you are providing a p value but it's not clear : what test did you used ?

Fig 14 : why is it written slope for the y-axis and not decadal trend in velocity ?

In the conclusion « Pearson correlations indicate significant relationships between velocity and glacier area, slope, and aspect: » is a strong statement recording the pearson value you got.