

Supplement

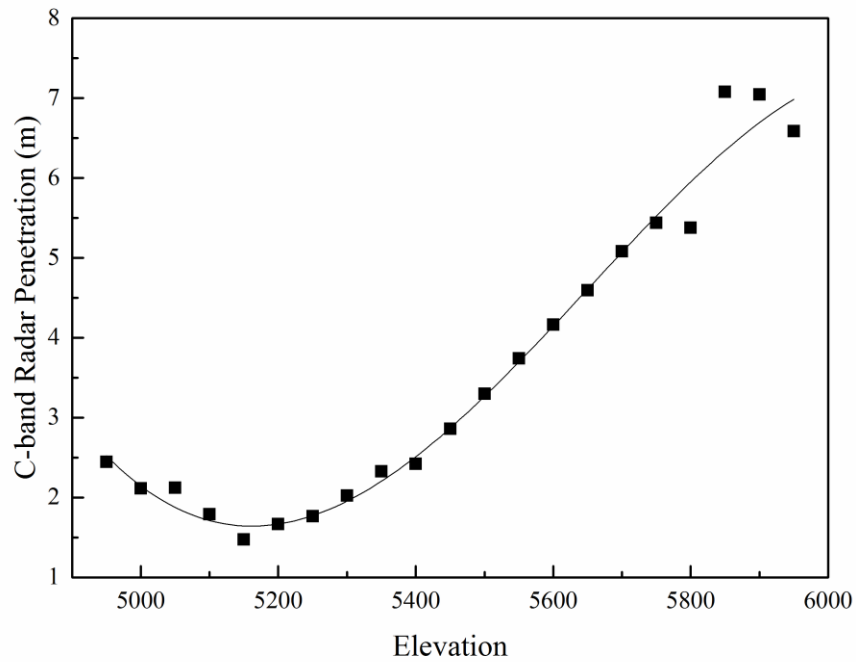


Figure S1: C-band Radar Penetration depth differences at each elevation bin.

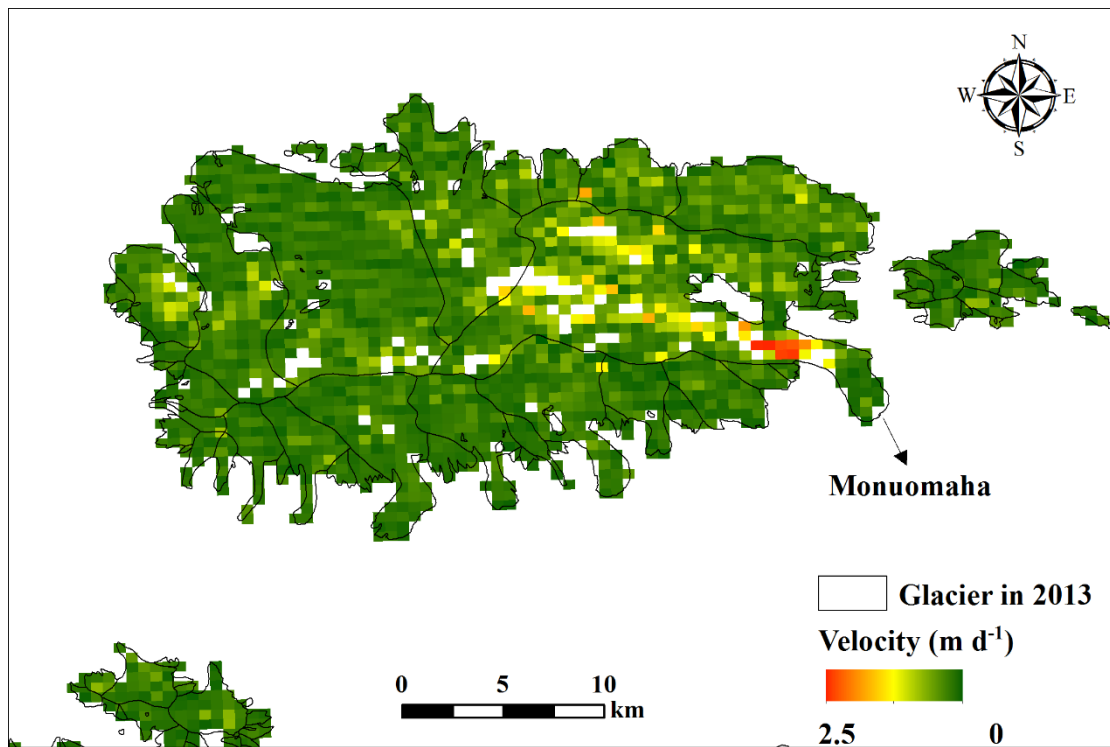


Figure S2. Glacier velocities from 10 Feb 2009 to 14 Mar 2009 derived from Landsat TM band 3 by the frequency-based feature tracking (phase correlation) (Leprince et al., 2007) which was performed using the EXELIS VIS ENVI add-on COSI-Corr in order to get the horizontal

offset of the corresponding image points (eg., Shangguan et al., 2015). A signal-to-noise ratio (SNR) of 0.9 was selected and applied to filter obvious outliers.

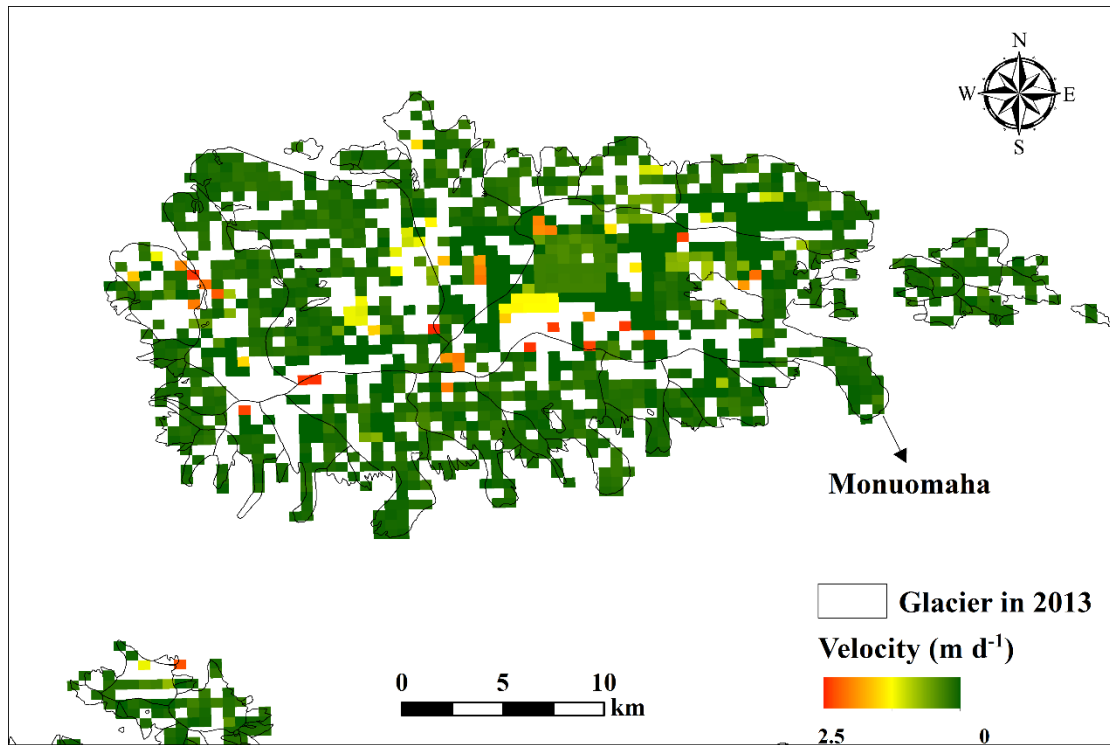


Figure S3: Glacier velocities from 15 Jun, 2008 to 10 Feb, 2009 derived from Landsat TM band 3 by the frequency-based feature tracking (phase correlation) (Leprince et al., 2007) which was performed using the EXELIS VIS ENVI add-on COSI-Corr in order to get the horizontal offset of the corresponding image points (eg., Shangguan et al., 2015). A signal-to-noise ratio (SNR) of 0.9 was selected and applied to filter obvious outliers.

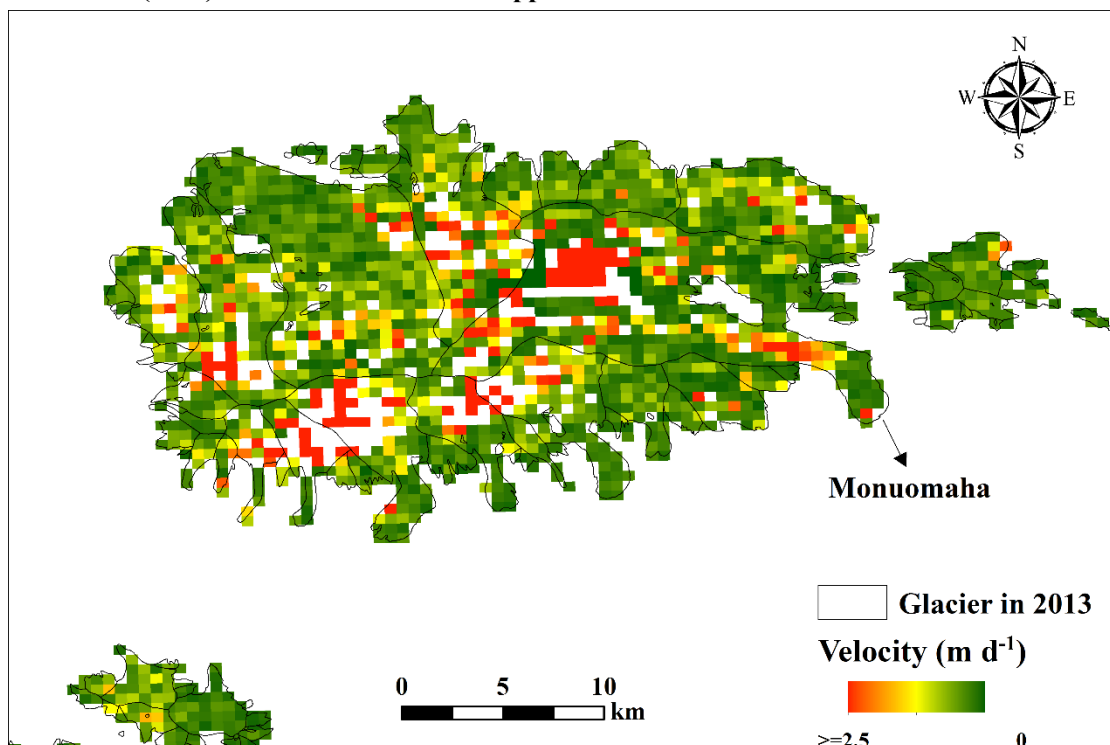


Figure S4: Glacier velocities from 15 Apr, 2009 to 1 May, 2009 derived from Landsat TM band 3 by the frequency-based feature tracking (phase correlation) (Leprince et al., 2007) which was performed using the EXELIS VIS ENVI add-on COSI-Corr in order to get the horizontal offset of the corresponding image points (eg., Shangguan et al., 2015). A signal-to-noise ratio (SNR) of 0.9 was selected and applied to filter obvious outliers.

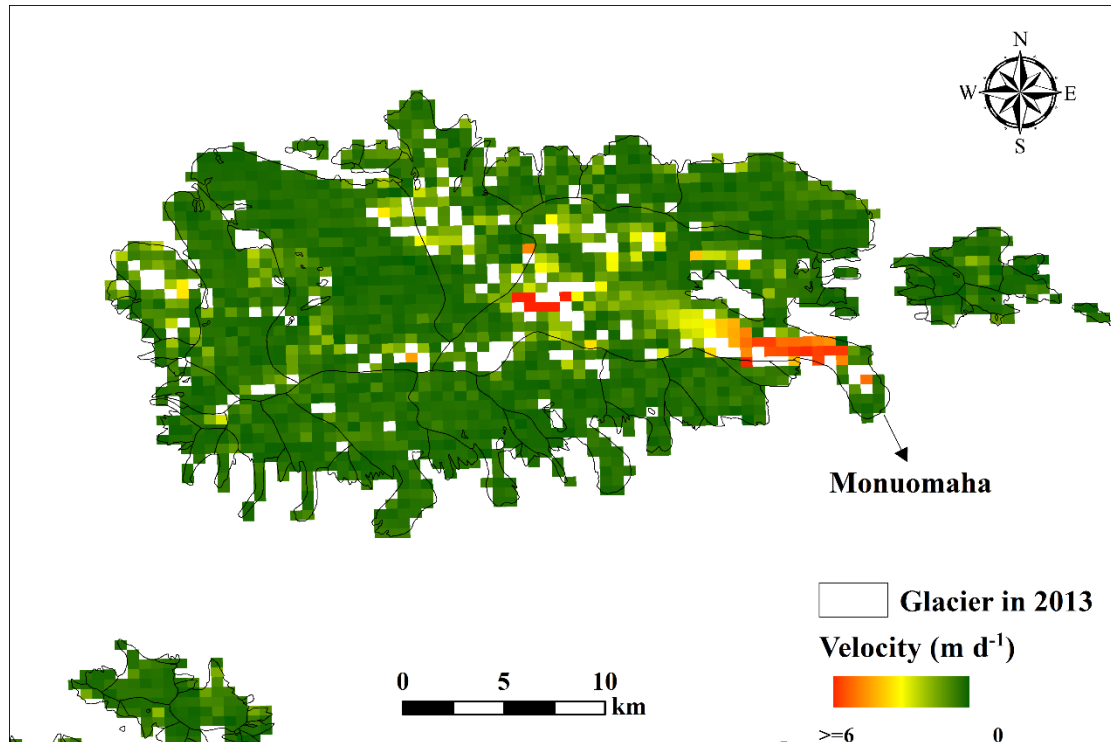


Figure S5: Glacier velocities from 9 Nov, 2009 to 25 Nov, 2009 derived from Landsat TM band 3 by the frequency-based feature tracking (phase correlation) (Leprince et al., 2007) which was performed using the EXELIS VIS ENVI add-on COSI-Corr in order to get the horizontal offset of the corresponding image points (eg., Shangguan et al., 2015). A signal-to-noise ratio (SNR) of 0.9 was selected and applied to filter obvious outliers.

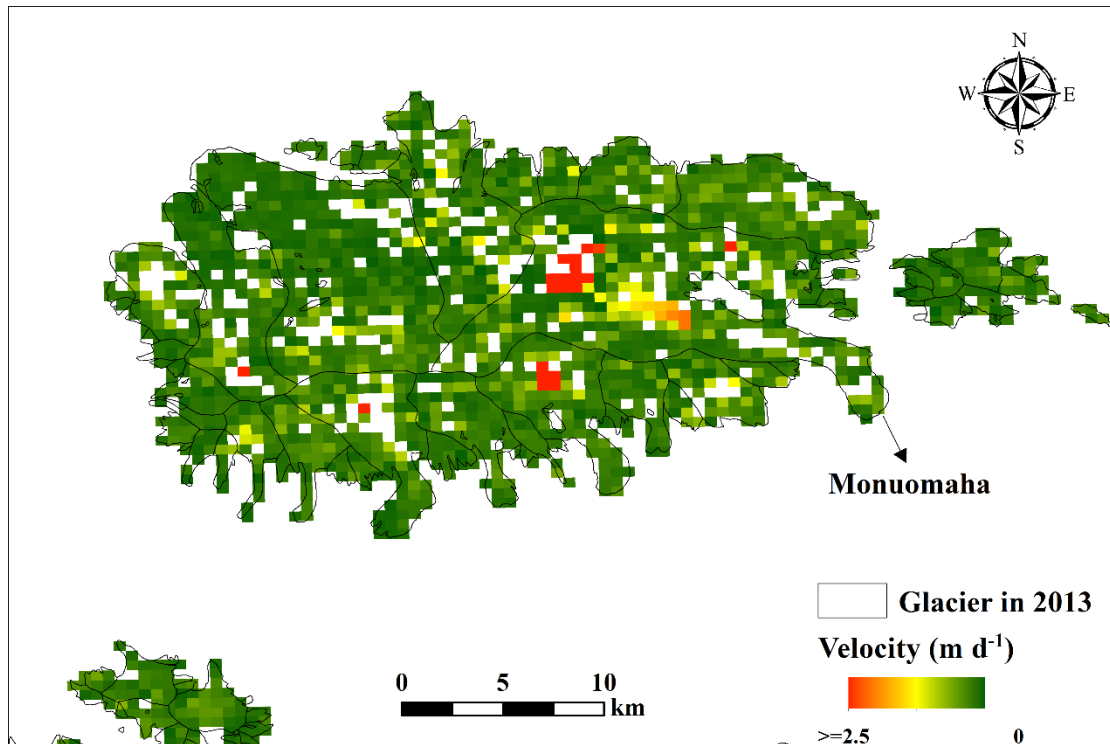


Figure S6: Glacier velocities from 17 Mar, 2010 to 4 May, 2010 derived from Landsat TM band 3 by the frequency-based feature tracking (phase correlation) (Leprince et al., 2007) which was performed using the EXELIS VIS ENVI add-on COSI-Corr in order to get the horizontal offset of the corresponding image points (eg., Shangguan et al., 2015). A signal-to-noise ratio (SNR) of 0.9 was selected and applied to filter obvious outliers.

References

Leprince, S., Barbot, S., Ayoub, F., and Avouac, J. P.: Automatic and Precise Orthorectification, Coregistration, and Subpixel Correlation of Satellite Images, Application to Ground Deformation Measurements, *Geoscience and Remote Sensing, IEEE Transactions on*, 45, 1529-1558, <https://doi.org/10.1109/TGRS.2006.888937>, 2007.