Supplement of

Brief communication: Significant cold bias in ERA5 output for McMurdo region, Antarctica

Ricardo Garza-Giron[1*†], Slawek M. Tulaczyk[1]

[1]Department of Earth and Planetary Sciences, University of California, Santa Cruz, CA, 95064, USA

*Correspondence to: Ricardo Garza Giron (rgarzagi@ucsc.edu)
†Current address: Warner College of Natural Resources, Colorado State University, Fort Collins, CO 80523, USA.

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Comparison of the monthly averaged surface temperature time series recorded at the Automatic Weather Stations (AWS) and the values from the closest grid node of the ERA5 reanalysis.

In this section of the supporting information we show the comparison of the temperature time series for the 17 Automatic Weather Stations (AWS) that we studied and the reanalaysis data at the closest grid point, as well as the correlogram from which one can see the seasonal dependence on the bias as noted in the main text.

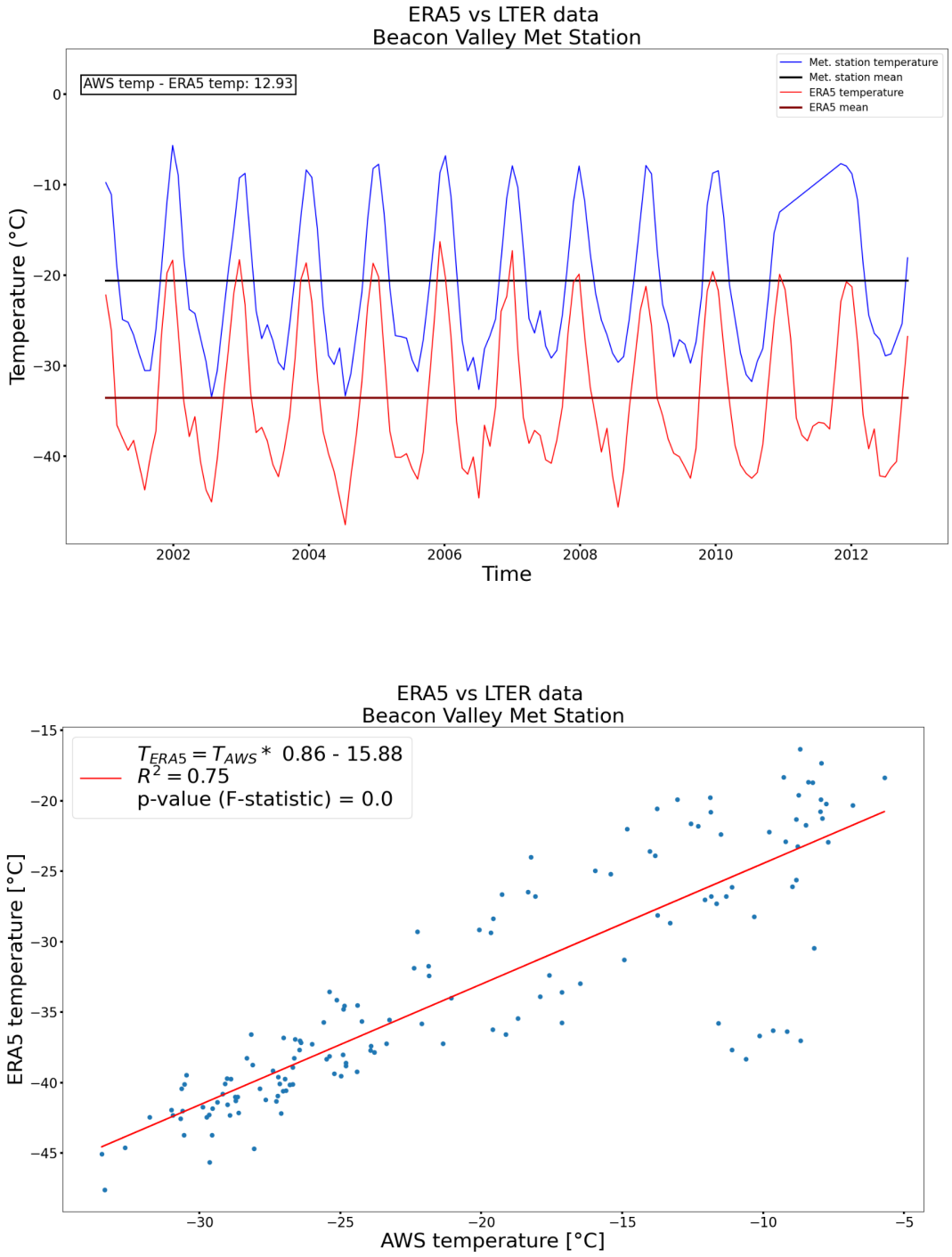


Figure S1. a) Time series for station Beacon Valley (BENM) (blue) and the values from the closest grid node of the ERA5 reanalysis (red). b) Correlogram.

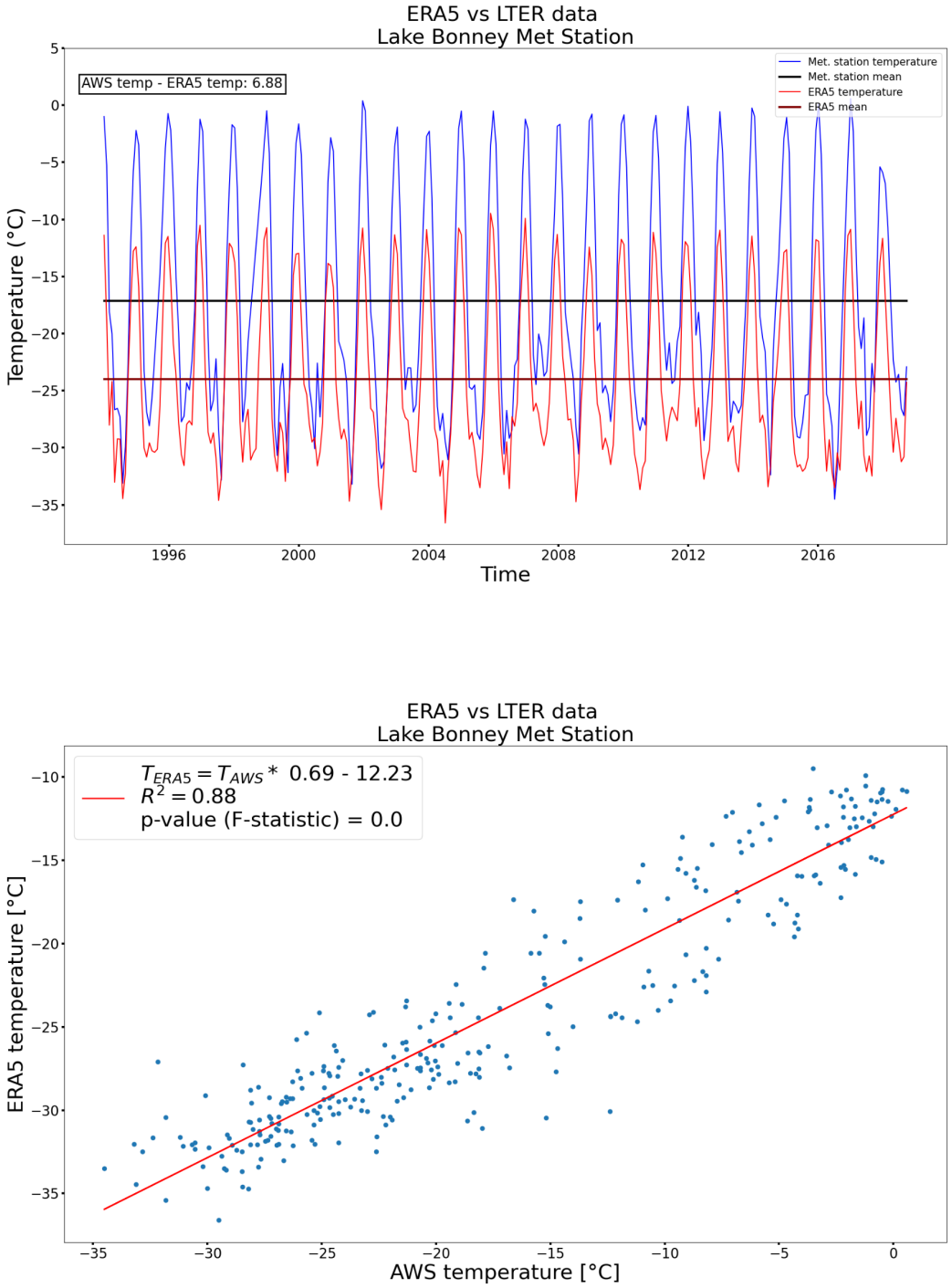


Figure S2. a) Time series for station Lake Bonney (BOYM) (blue) and the values from the closest grid node of the ERA5 reanalysis (red). b) Correlogram.

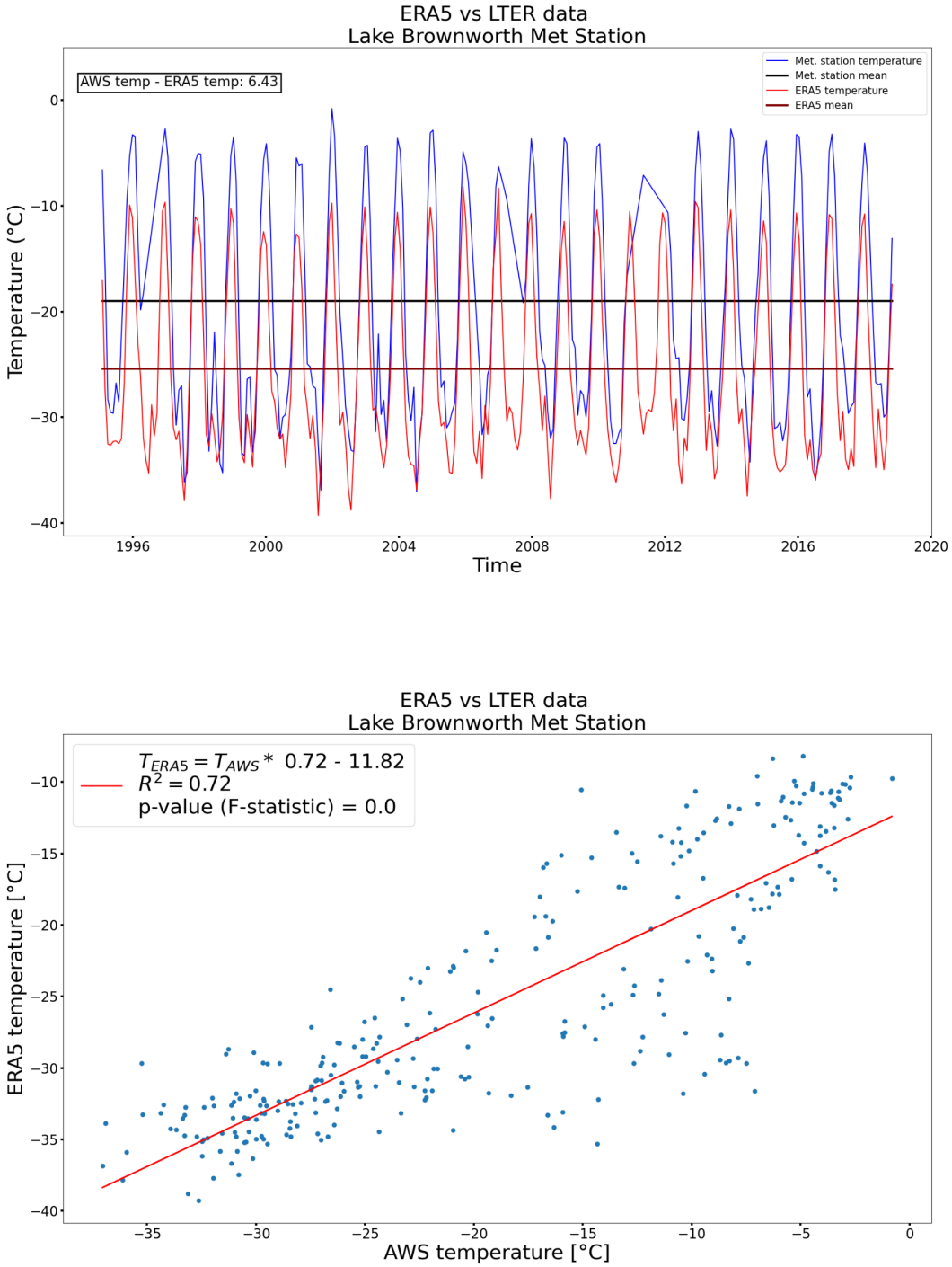


Figure S3. a) Time series for station Lake Brownworth (BRHM) (blue) and the values from the closest grid node of the ERA5 reanalysis (red). b) Correlogram.

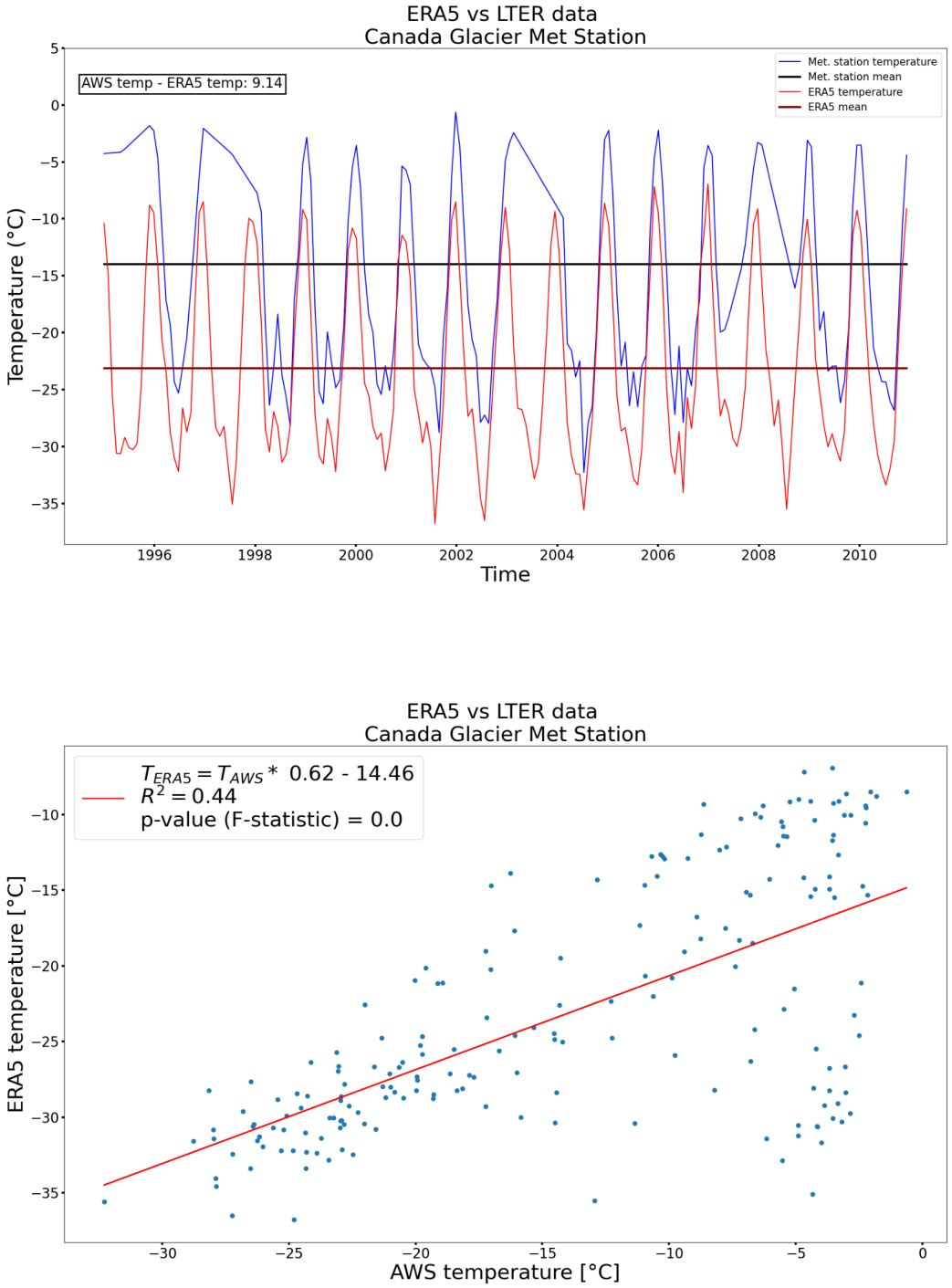


Figure S4. a) Time series for station Canada Glacier (CAAM) (blue) and the values from the closest grid node of the ERA5 reanalysis (red). b) Correlogram.

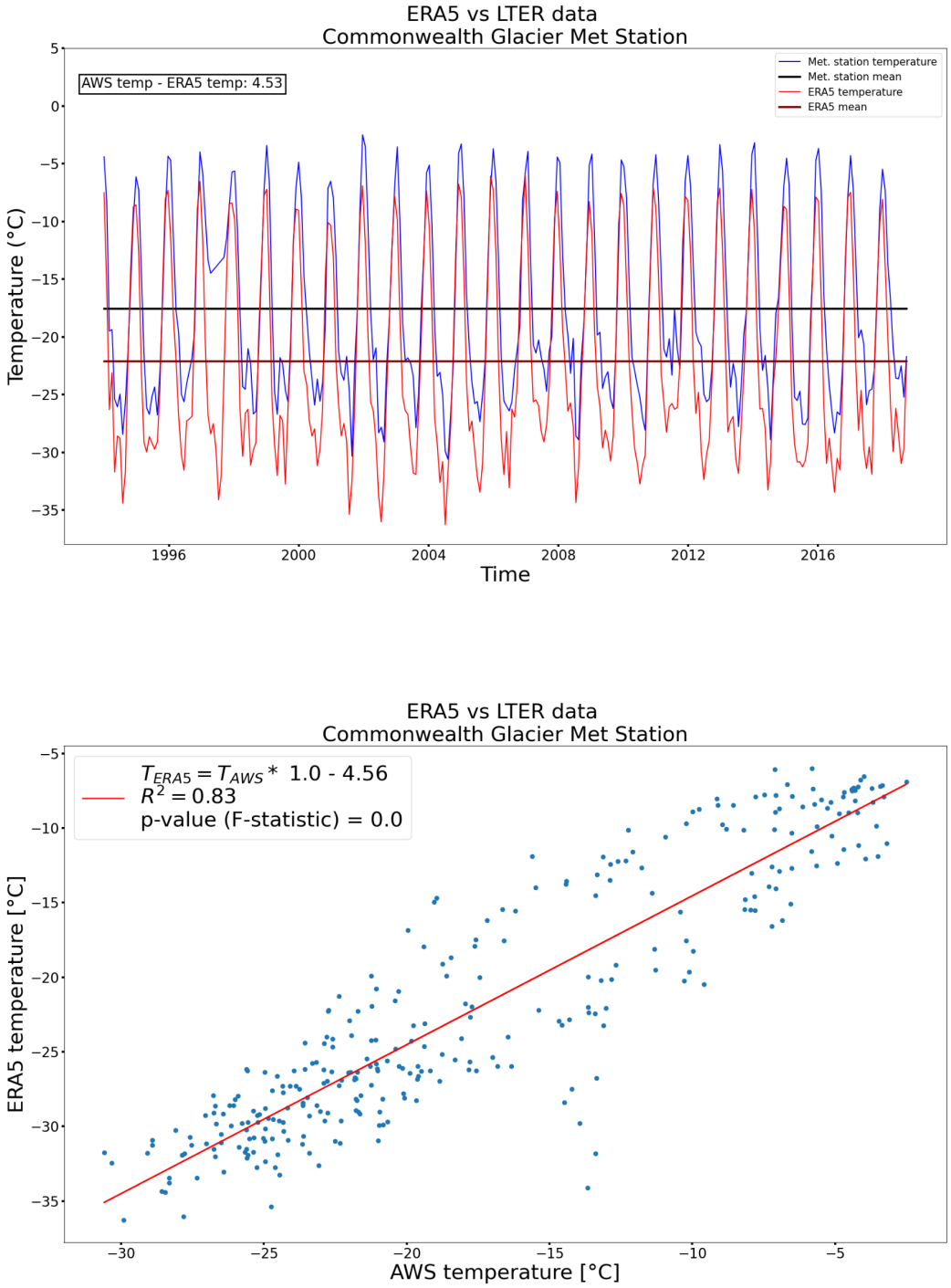


Figure S5. a) Time series for station Commonwealth Glacier (COHM) (blue) and the values from the closest grid node of the ERA5 reanalysis (red). b) Correlogram.

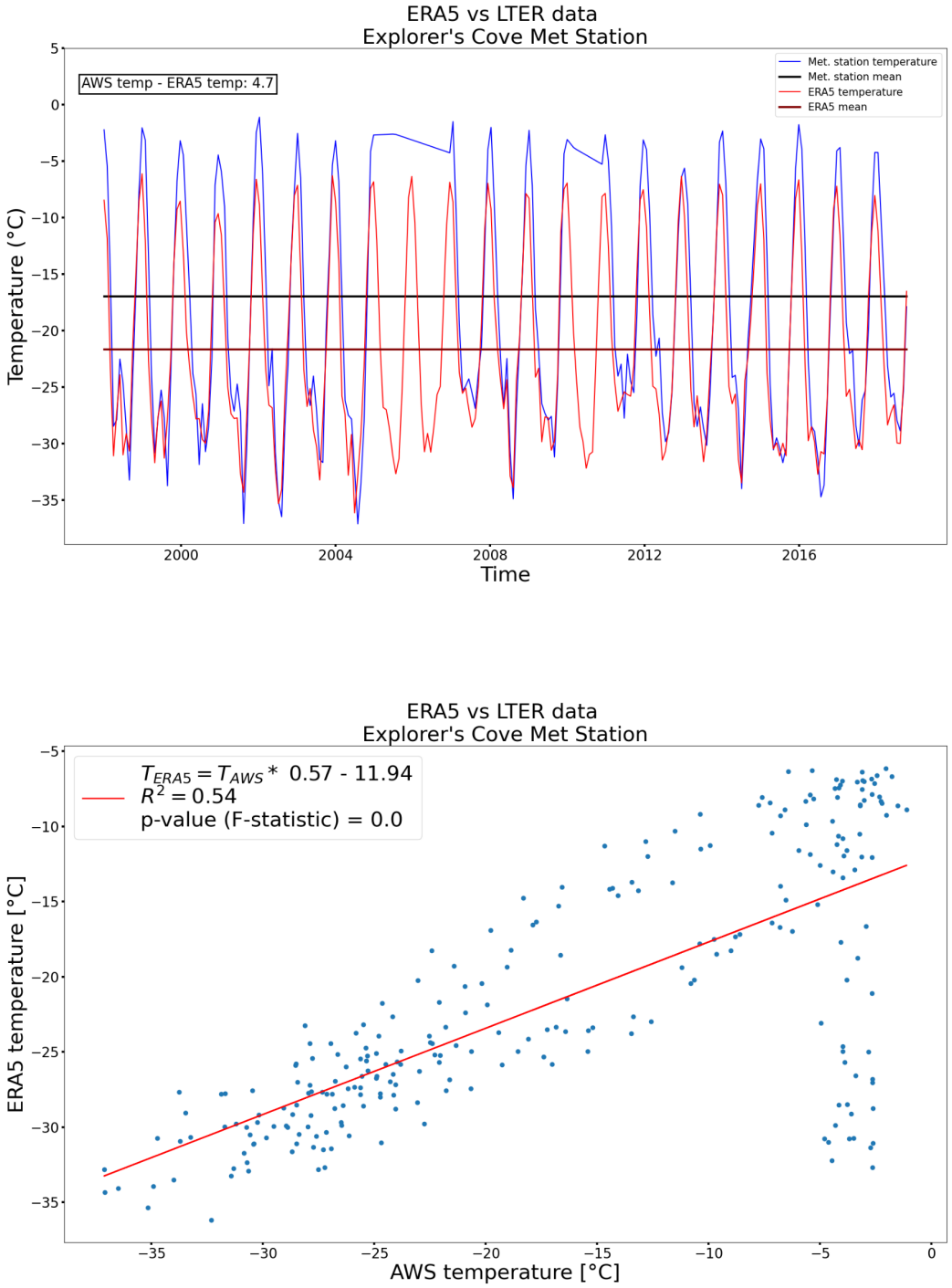


Figure S6. a) Time series for station Explorer's Cove (EXEM) (blue) and the values from the closest grid node of the ERA5 reanalysis (red). b) Correlogram.

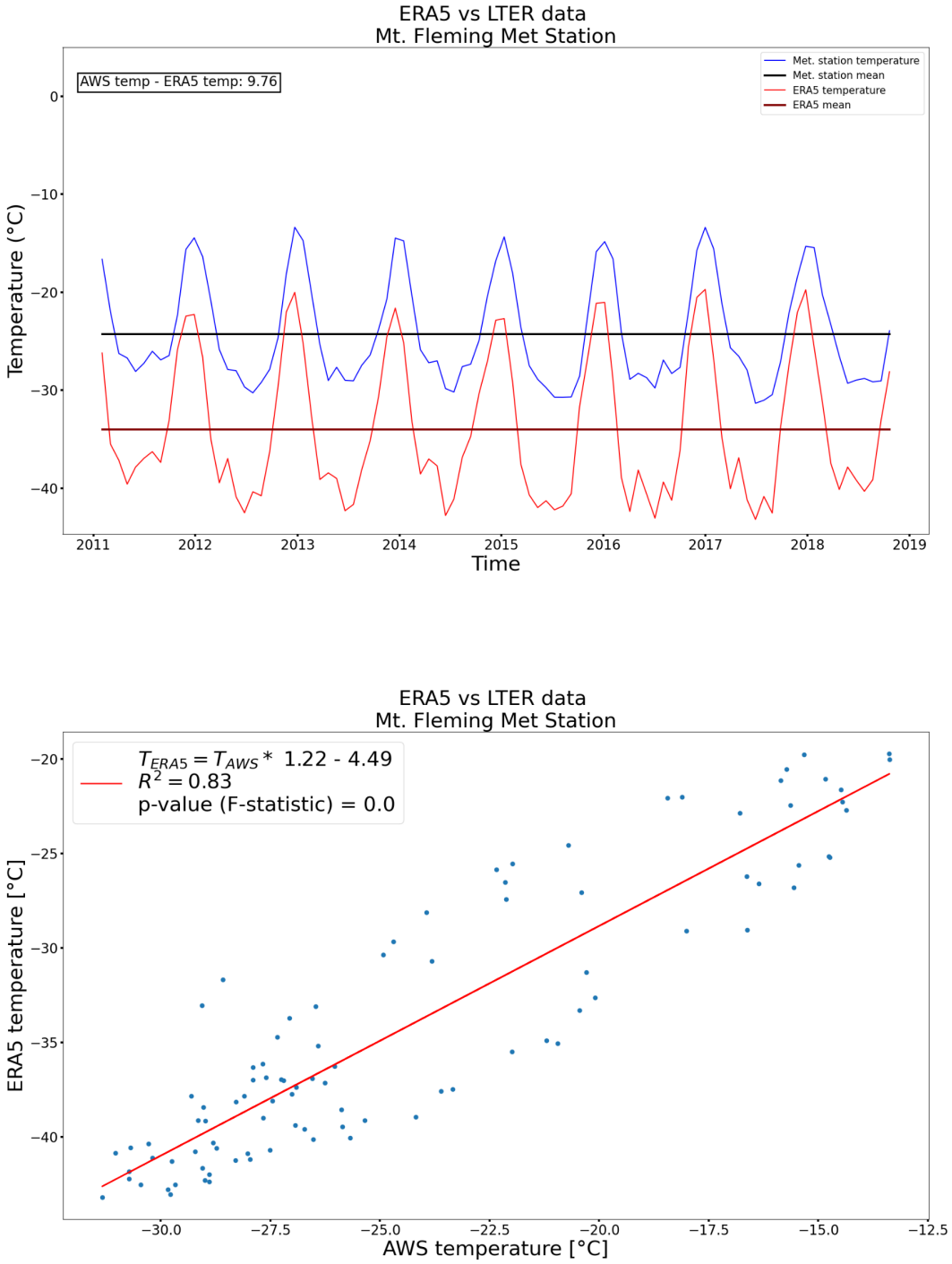


Figure S7. a) Time series for station Mount Fleming (FLMM) (blue) and the values from the closest grid node of the ERA5 reanalysis (red). b) Correlogram.

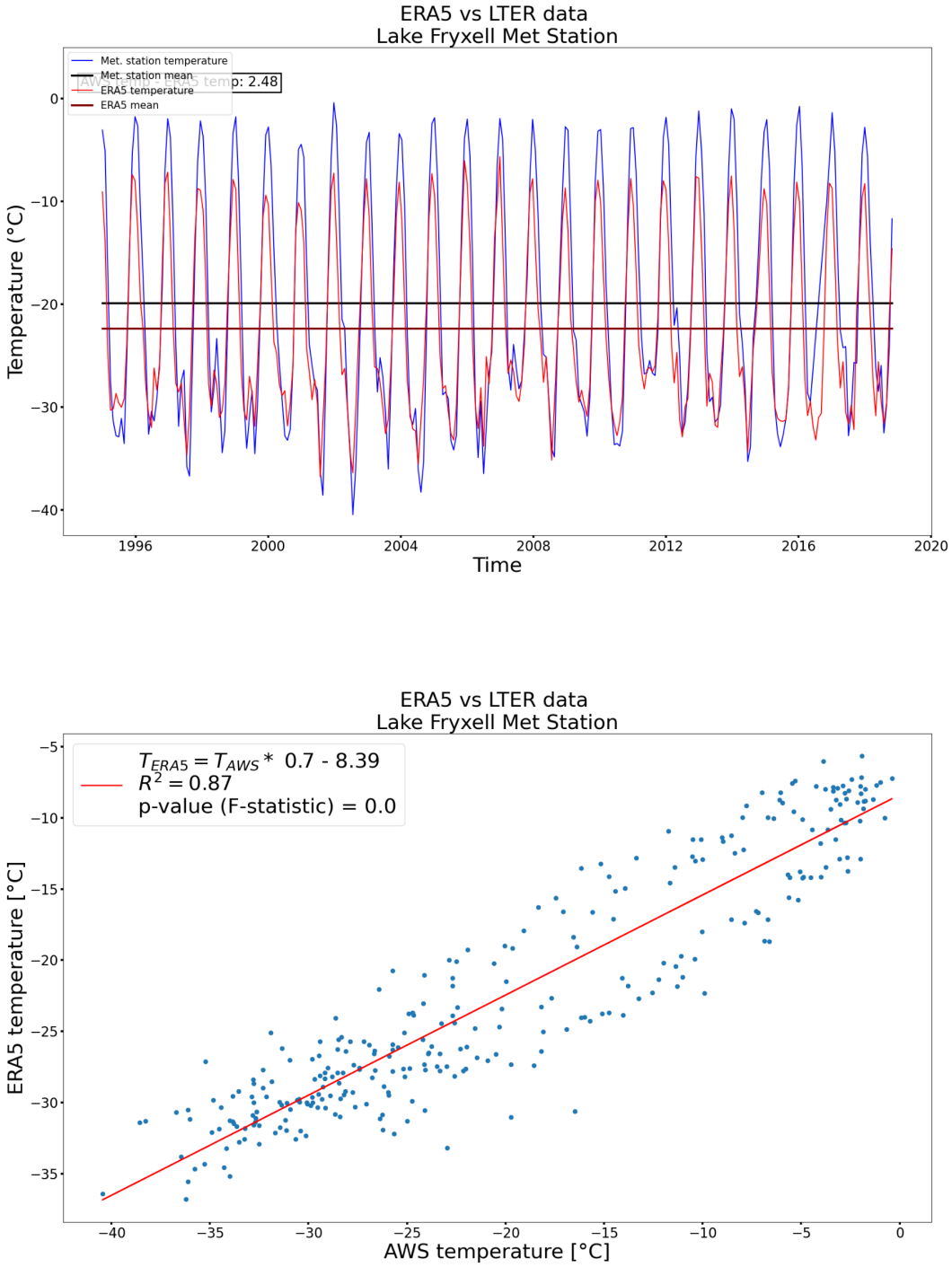


Figure S8. a) Time series for station Lake Fryxell (FRLM) (blue) and the values from the closest grid node of the ERA5 reanalysis (red). b) Correlogram.

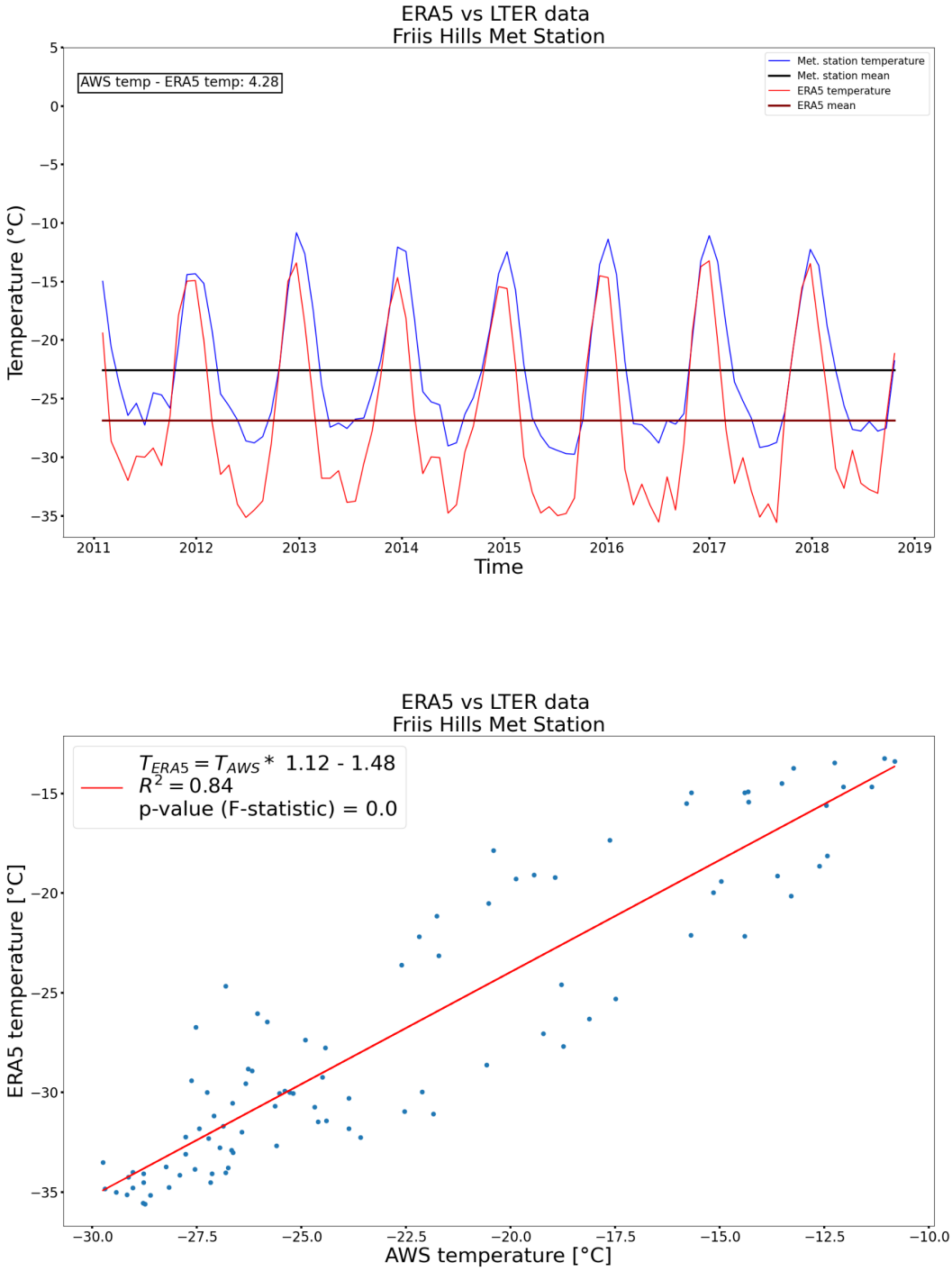


Figure S9. a) Time series for station Friis Hills (FRSM) (blue) and the values from the closest grid node of the ERA5 reanalysis (red). b) Correlogram.

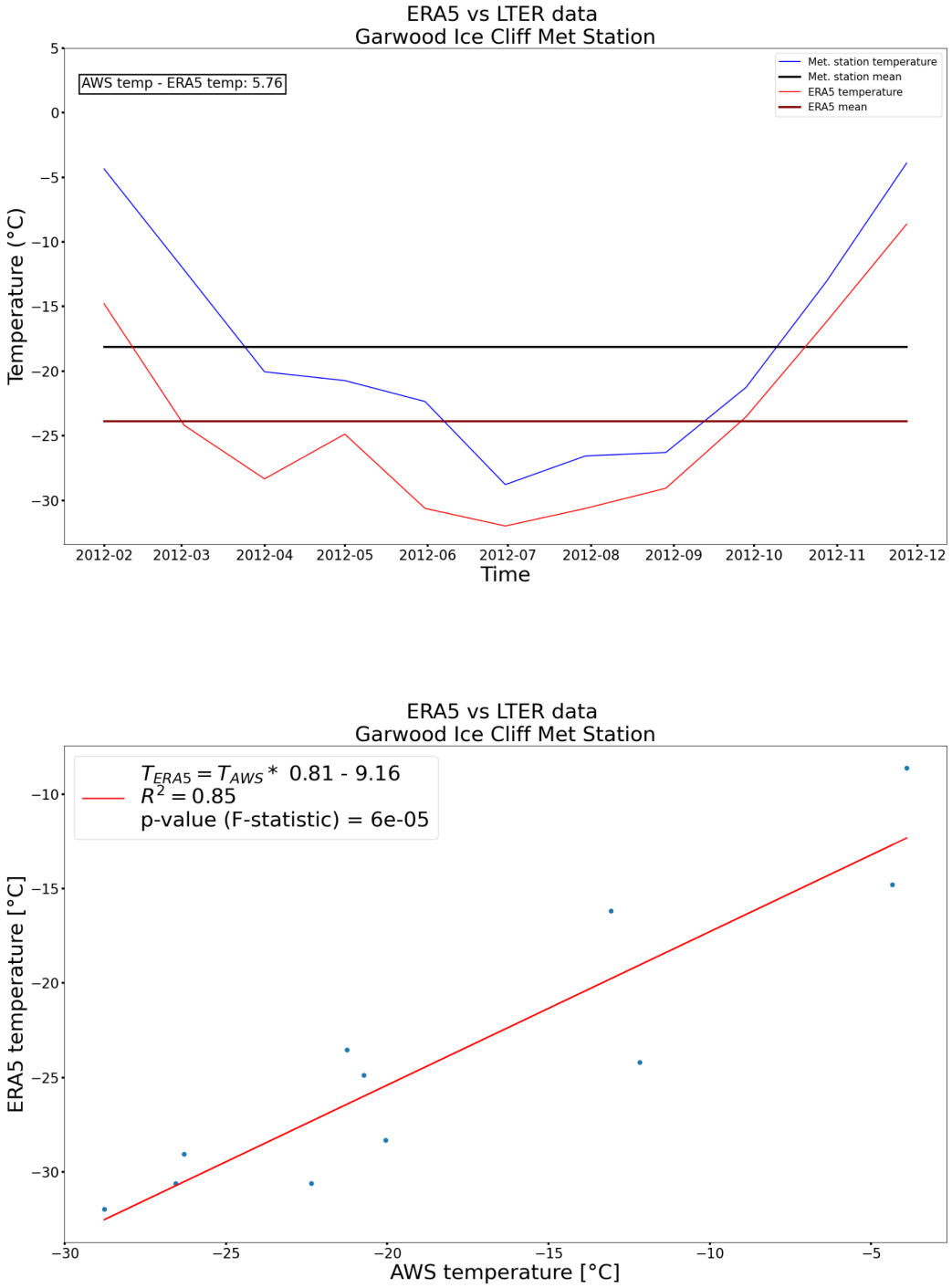


Figure S10. a) Time series for station Garwood Ice Cliff (GAFM) (blue) and the values from the closest grid node of the ERA5 reanalysis (red). b) Correlogram.

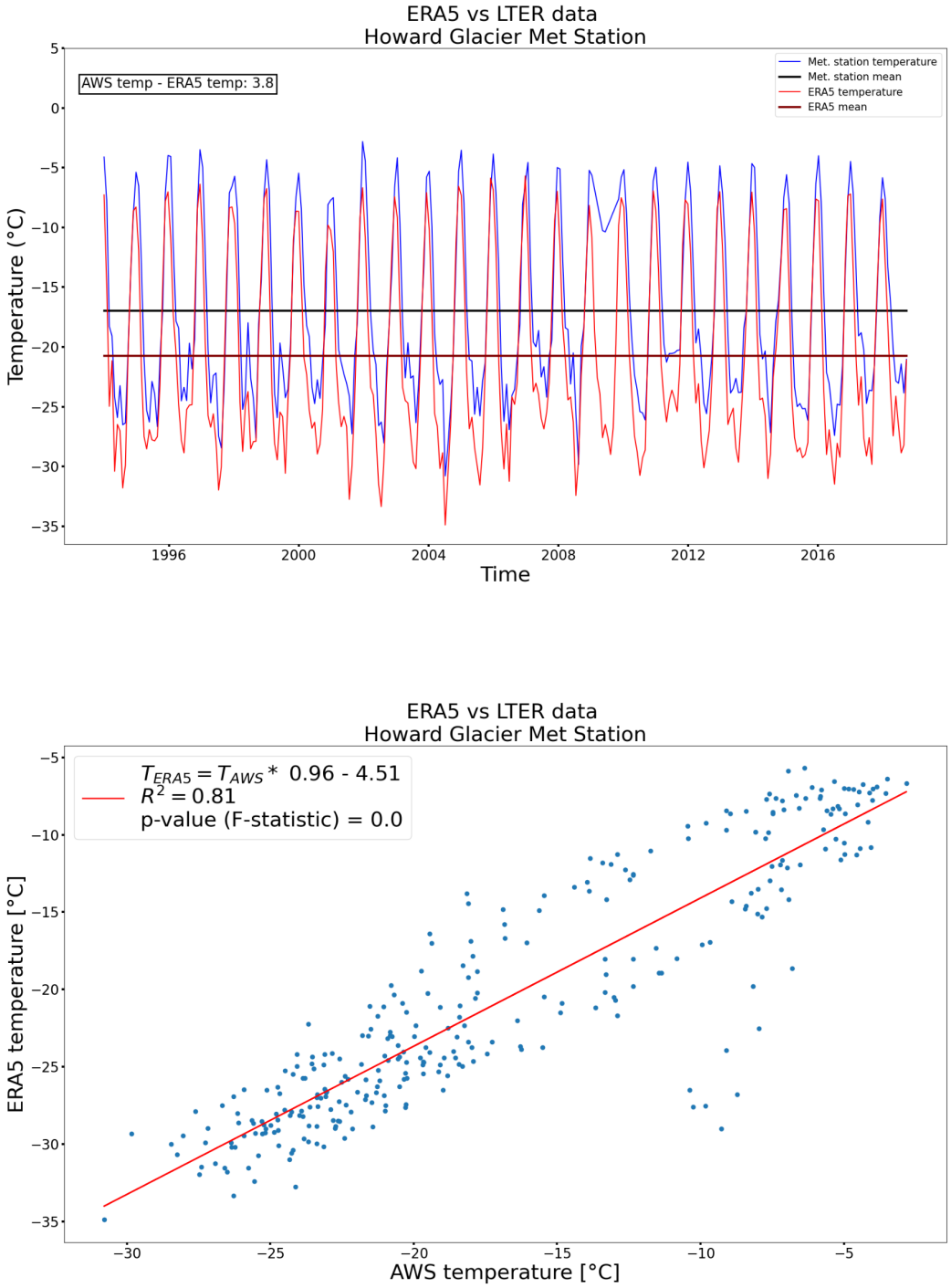


Figure S11. a) Time series for station Howard Glacier (HODM) (blue) and the values from the closest grid node of the ERA5 reanalysis (red). b) Correlogram.

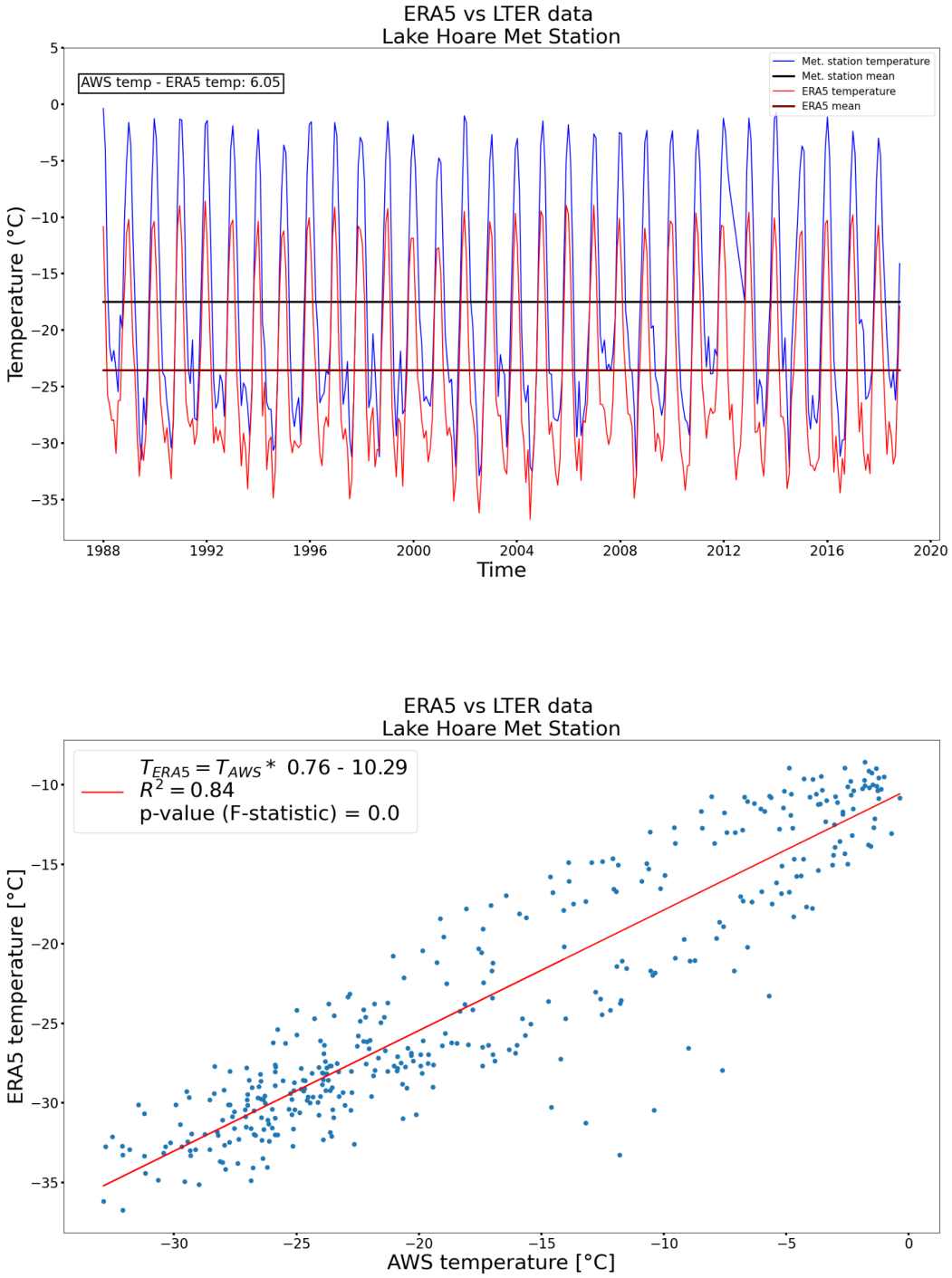


Figure S12. a) Time series for station Lake Hoare (HOEM) (blue) and the values from the closest grid node of the ERA5 reanalysis (red). b) Correlogram.

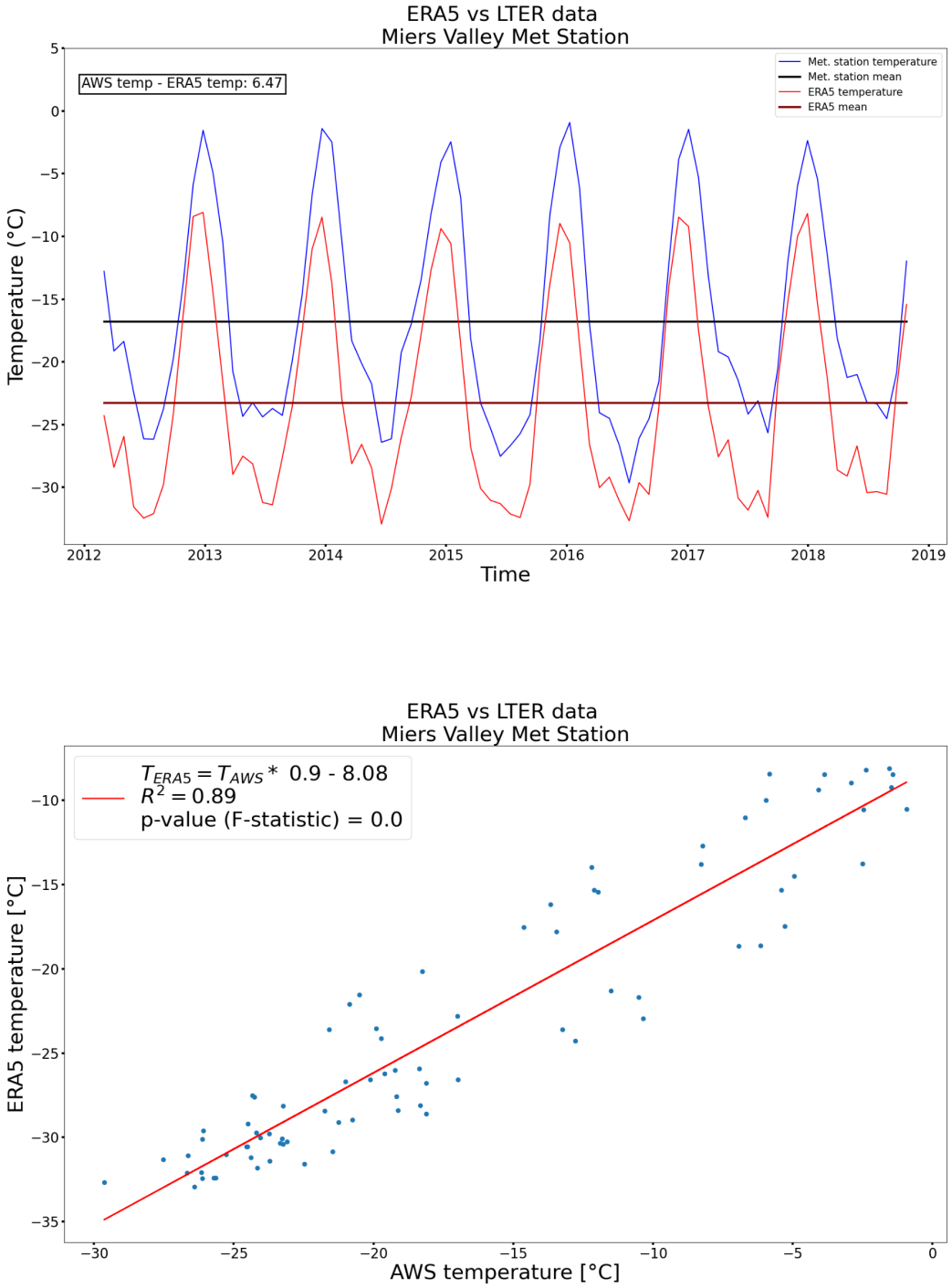


Figure S13. a) Time series for station Miers Valley (MISM) (blue) and the values from the closest grid node of the ERA5 reanalysis (red). b) Correlogram.

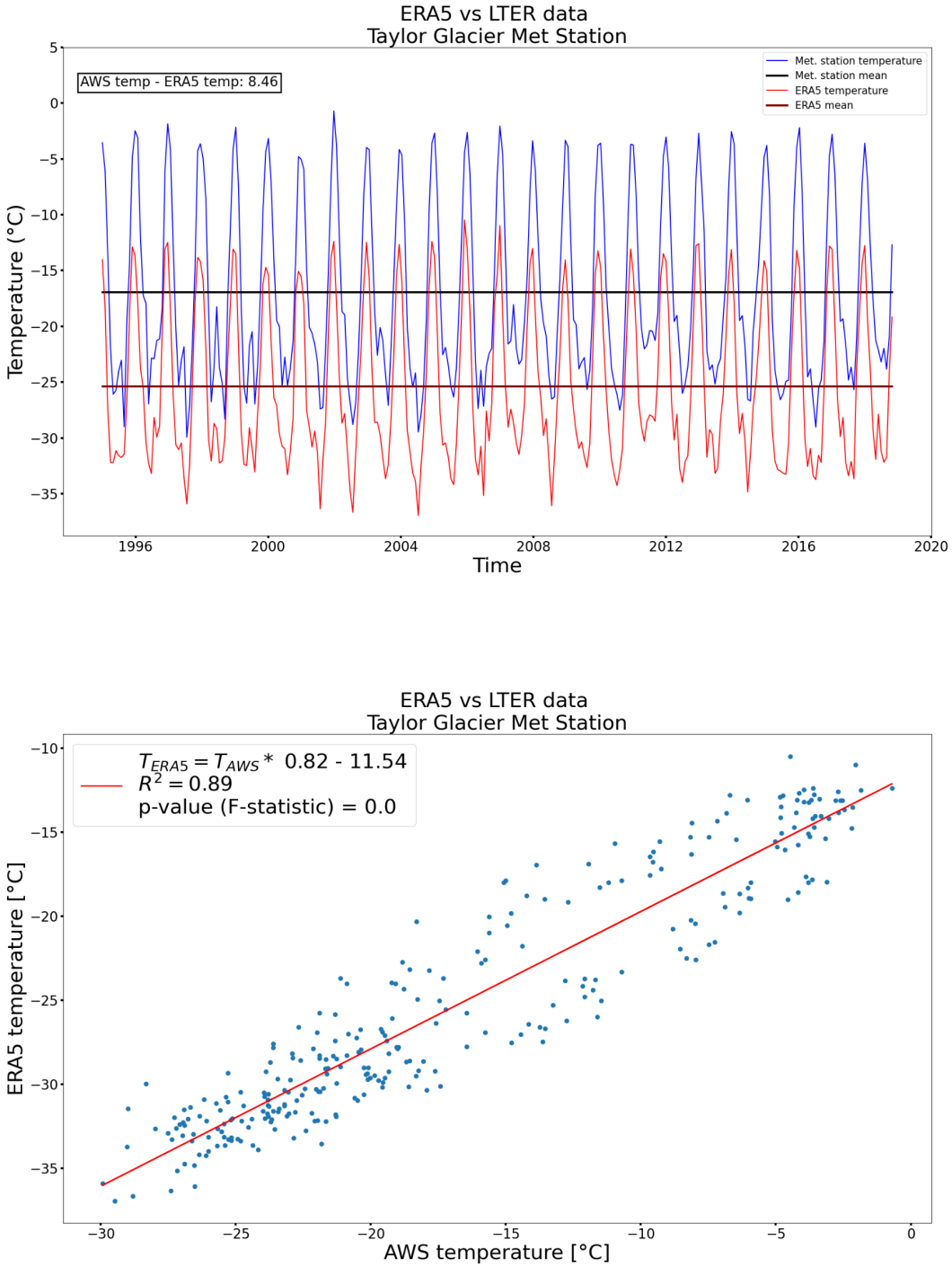


Figure S14. a) Time series for station Taylor Valley (TARM) (blue) and the values from the closest grid node of the ERA5 reanalysis (red). b) Correlogram.

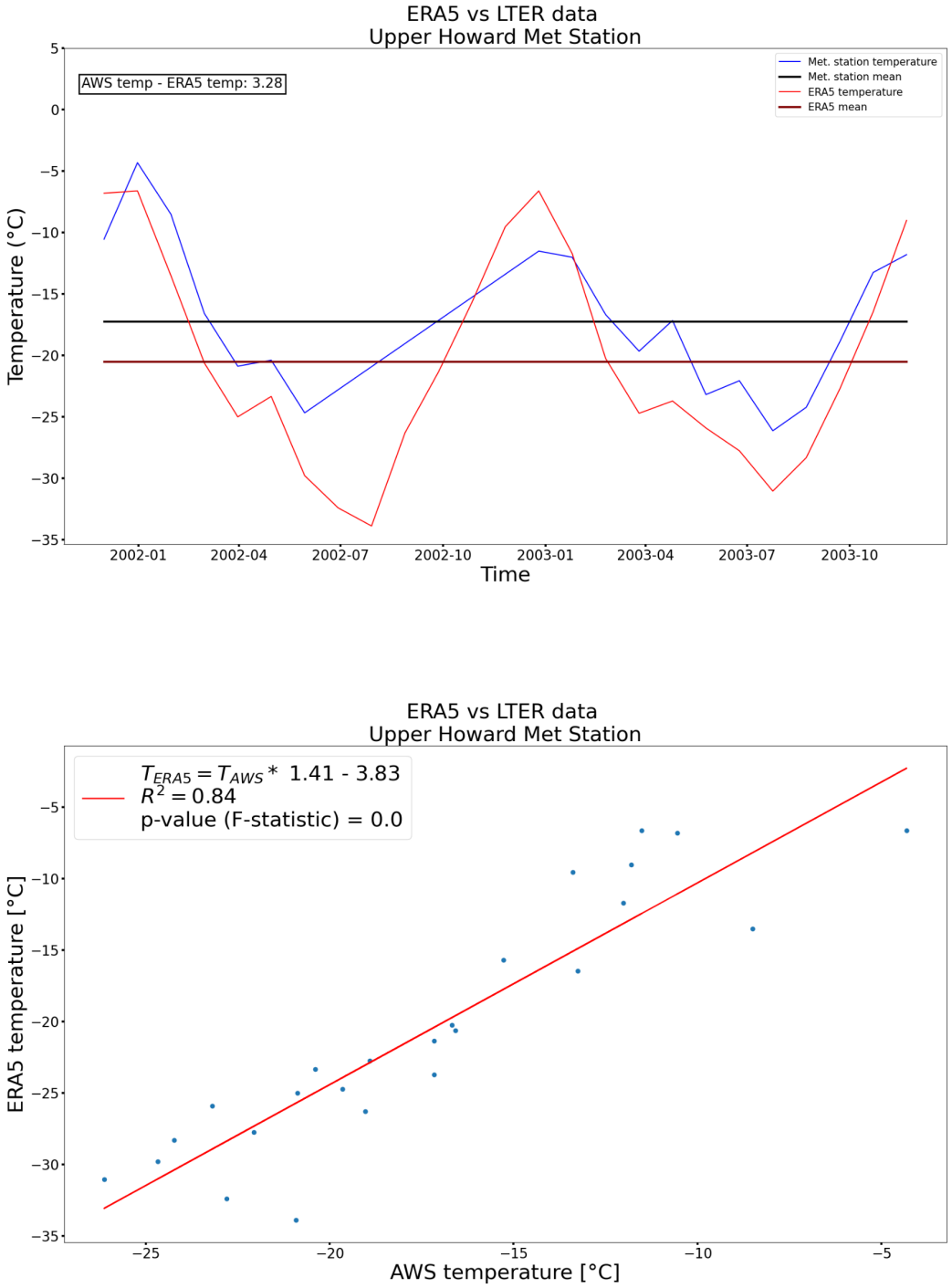


Figure S15. a) Time series for station Upper Howard (UHDM) (blue) and the values from the closest grid node of the ERA5 reanalysis (red). b) Correlogram.

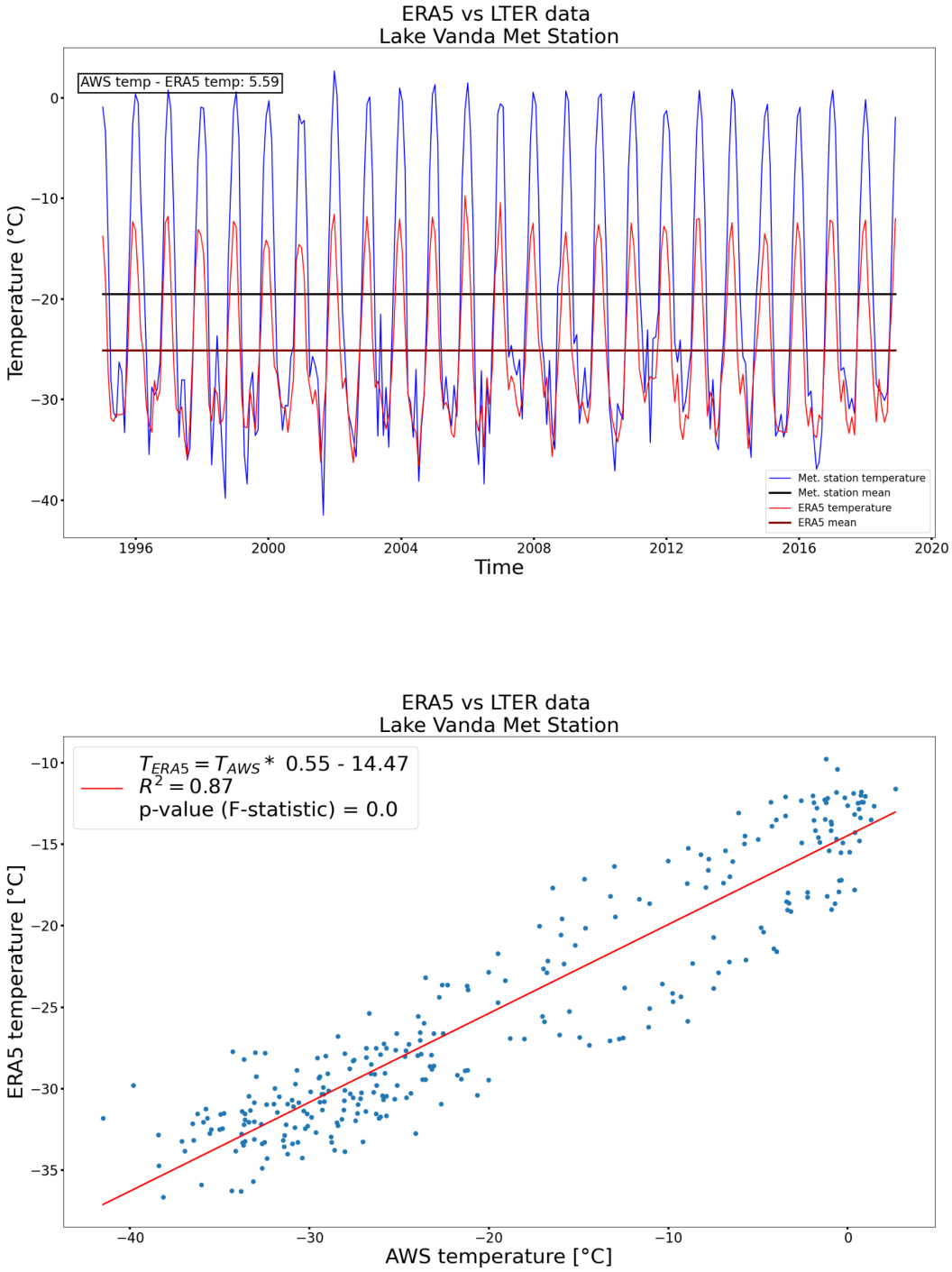
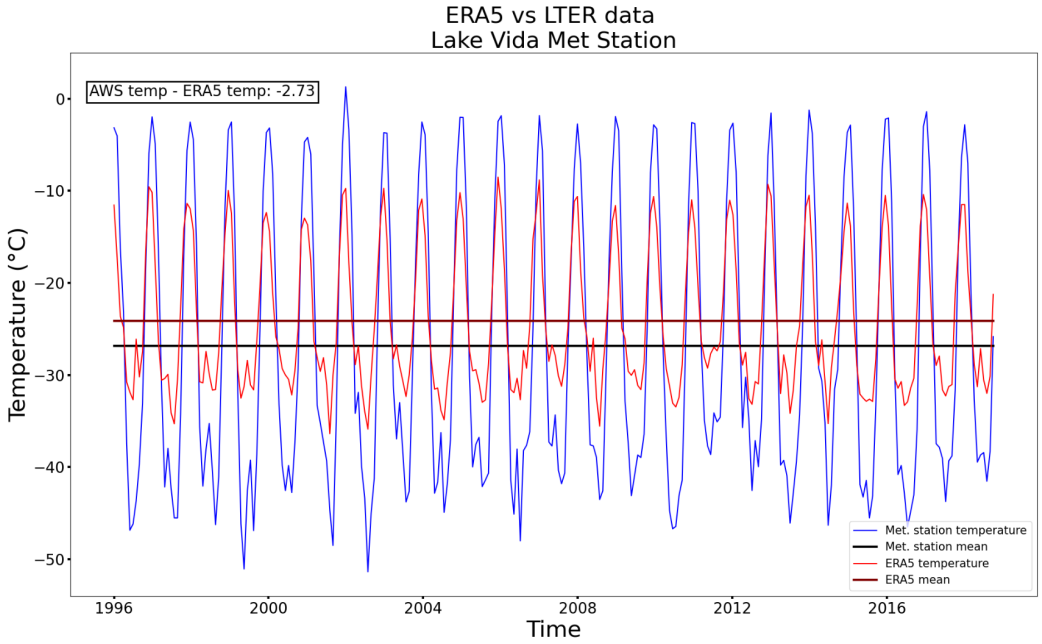


Figure S16. a) Time series for station Lake Vanda (VAAM) (blue) and the values from the closest grid node of the ERA5 reanalysis (red). b) Correlogram.



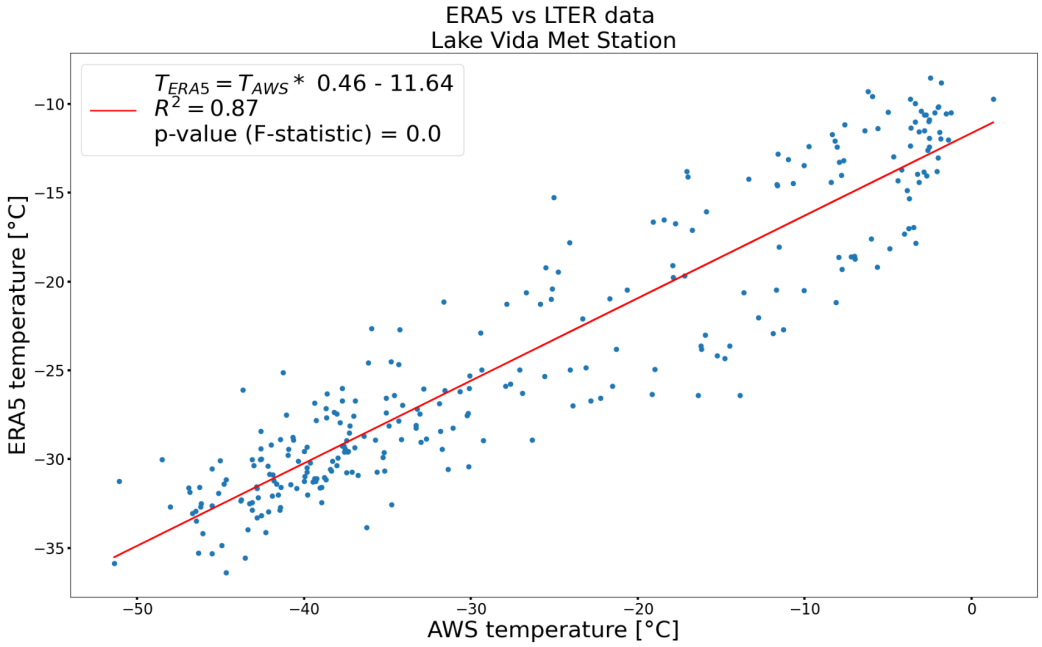


Figure S17. a) Time series for station Lake Vida (VIAM) (blue) and the values from the closest grid node of the ERA5 reanalysis (red). b) Correlogram.