

Evaluating PurpleAir Sensors: Do They Accurately Reflect Ambient Air Temperature?

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Number of Tables: 1

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Table S1. Classification rules of each sampling strata.

Sampling strata	Impervious surface (%)	Distance of grid center to major roads (meter)
Urban High	>50	<150
Urban Low	>50	>150
Suburban High	20-50	<150
Suburban Low	20-50	>150
Rural High	<20	<150
Rural Low	<20	>150



Figure S1. A typical setup showing the colocation of a PurpleAir sensor and a HOB0 data logger at a residential property.

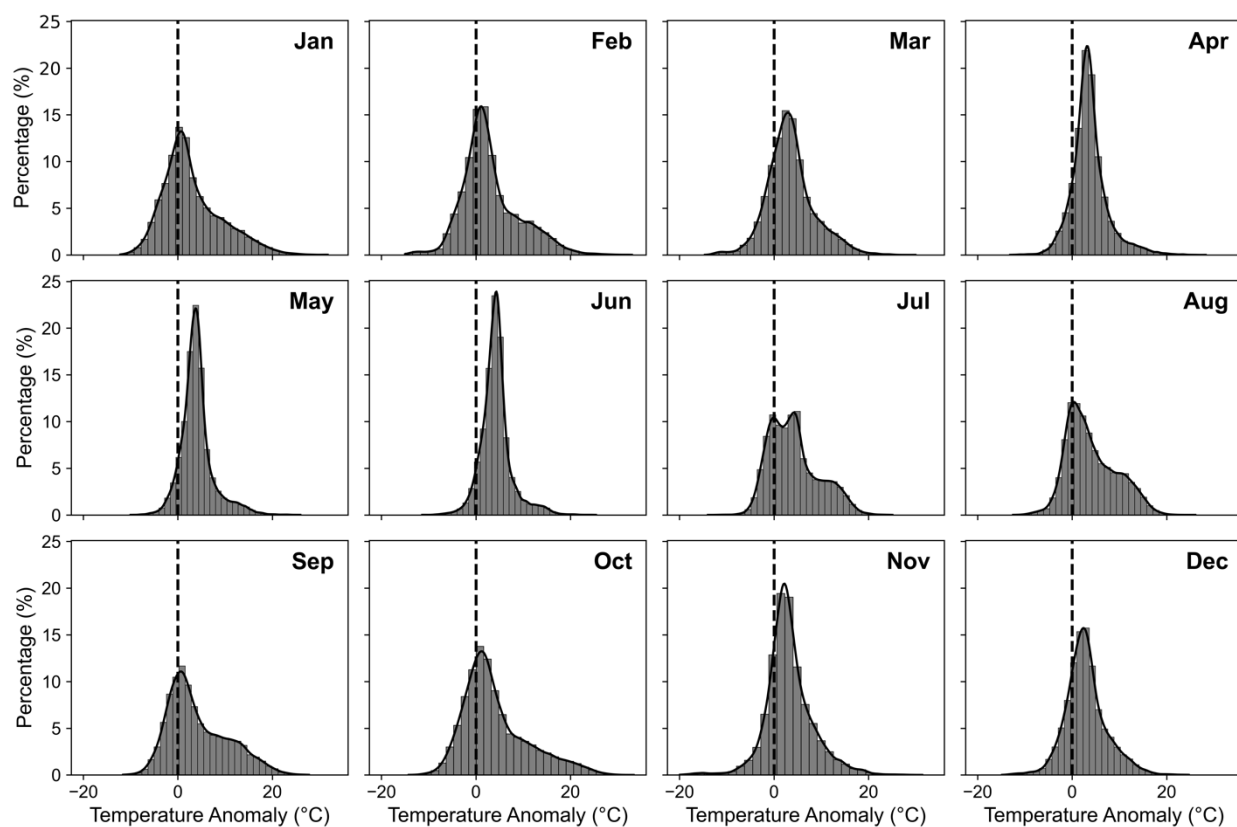


Figure S2. Monthly histograms of temperature anomaly. The black dashed line represents the zero-error scenario.

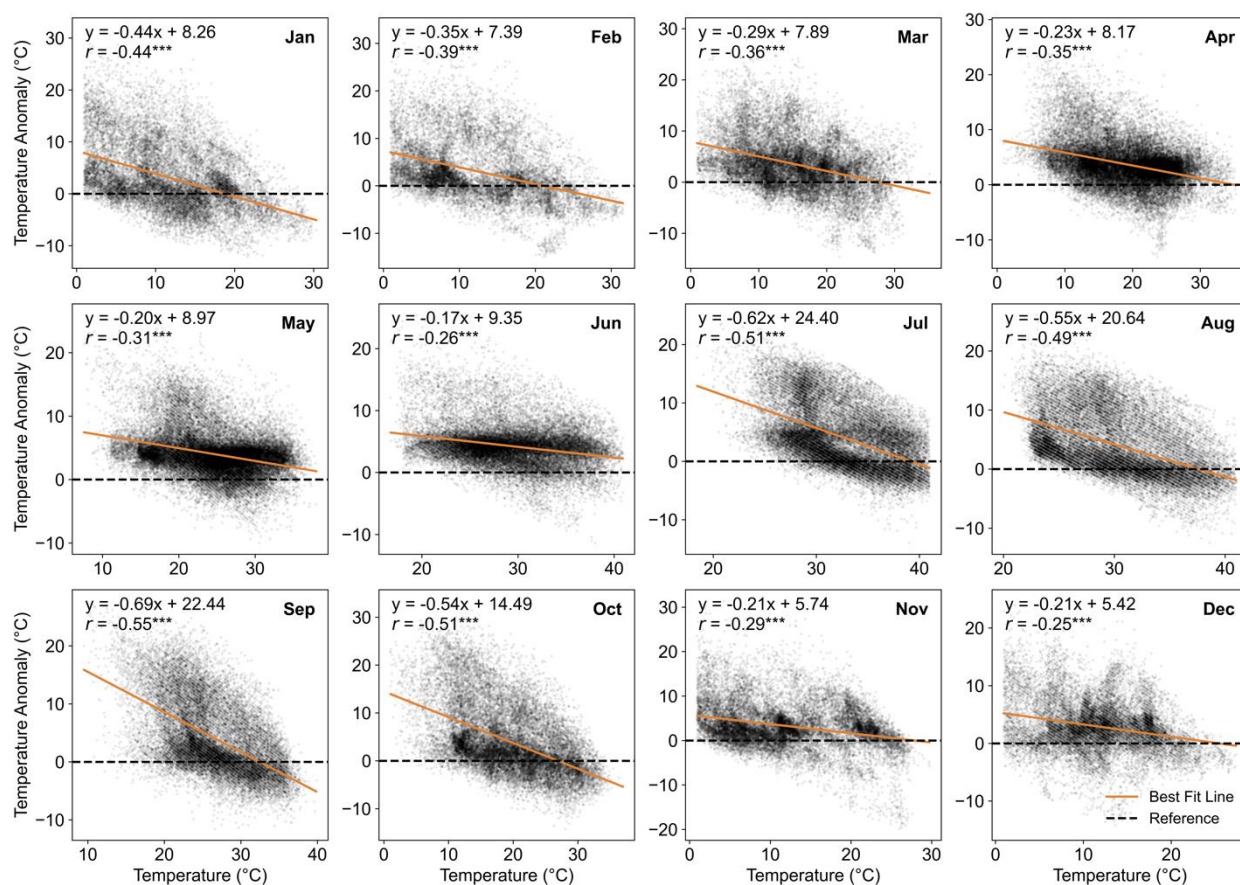


Figure S3. Monthly scatterplots of hourly temperature anomaly and hourly HOBO temperature measurements. The black dashed line represents the zero-error scenario, and the orange solid line is the best-fit line. Level of significance is indicated by * ($p < 0.05$), ** ($p < 0.01$), *** ($p < 0.001$).

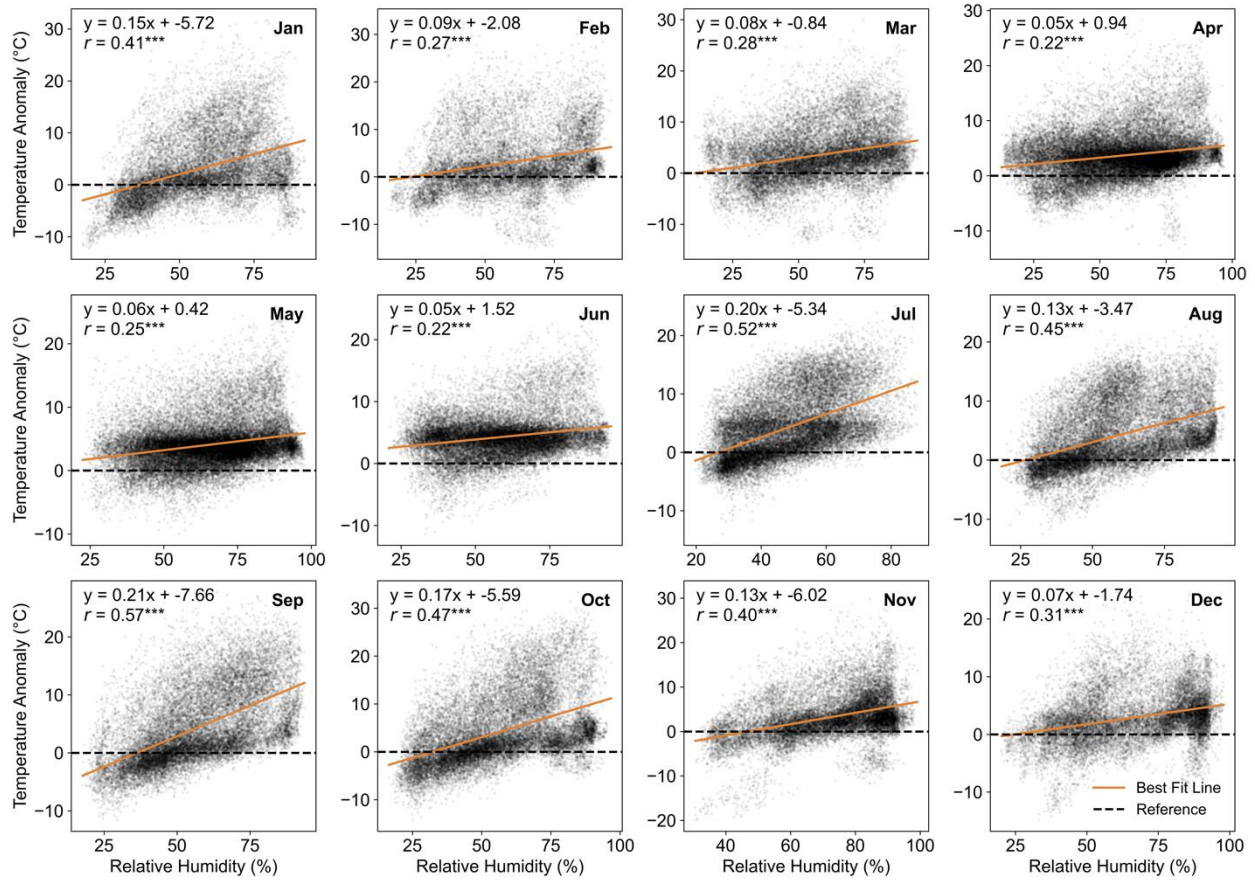


Figure S4. Monthly scatterplots of hourly temperature anomaly and hourly HOBO relative humidity measurements. The black dashed line represents the zero-error scenario, and the orange solid line is the best-fit line. Level of significance is indicated by * ($p < 0.05$), ** ($p < 0.01$), *** ($p < 0.001$).

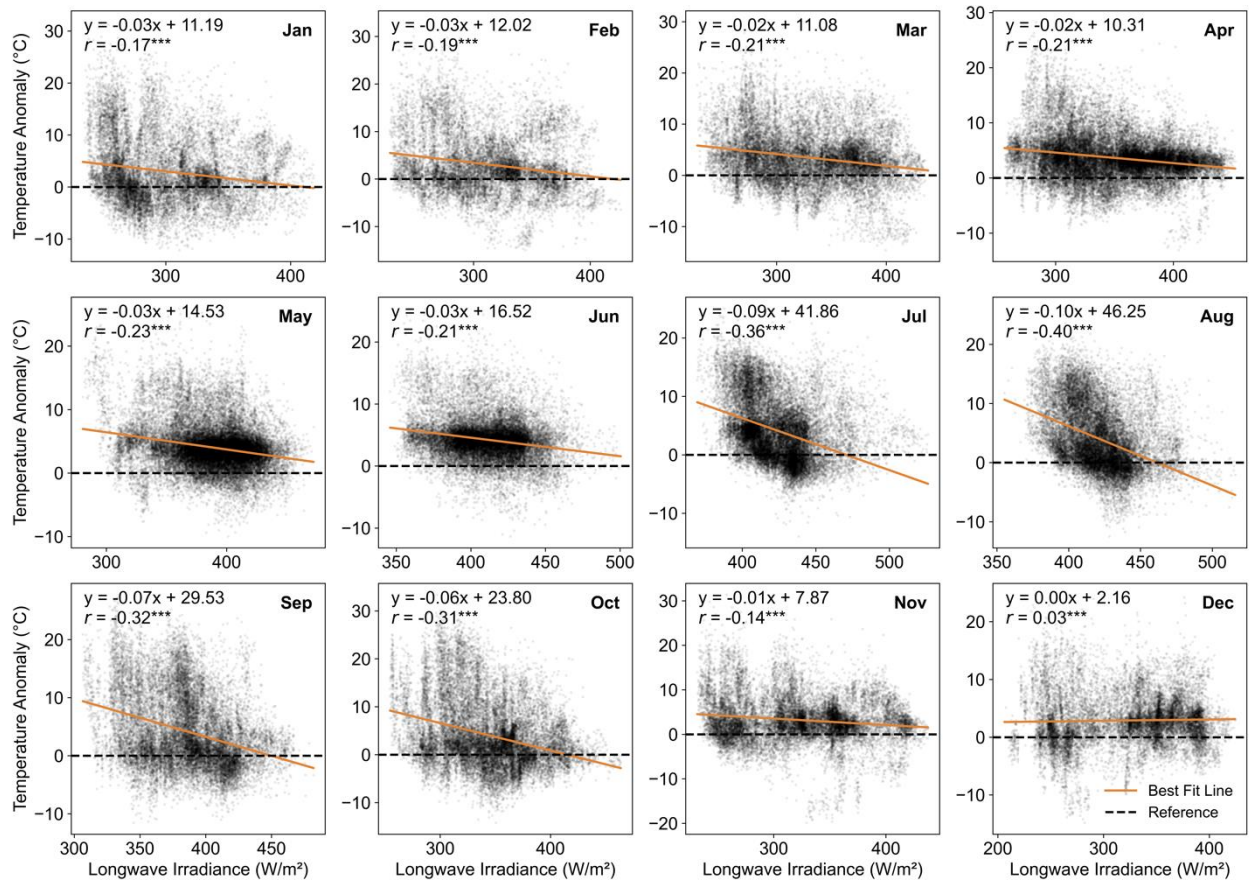


Figure S5. Monthly scatterplots of hourly temperature anomaly and hourly downwelling longwave irradiance observations. The black dashed line represents the zero-error scenario, and the orange solid line is the best-fit line. Level of significance is indicated by * ($p < 0.05$), ** ($p < 0.01$), *** ($p < 0.001$).

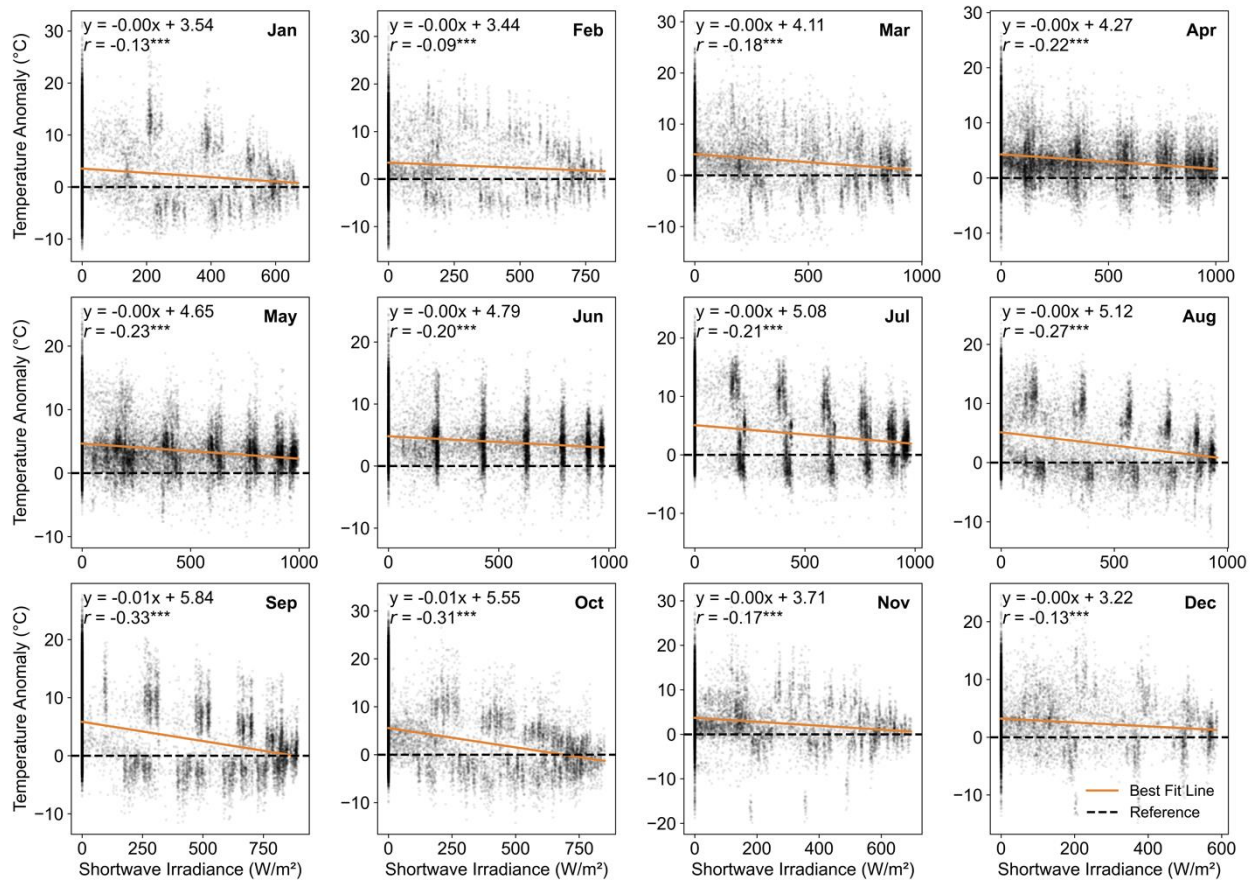


Figure S6. Monthly scatterplots of hourly temperature anomaly and hourly downwelling shortwave irradiance observations. The black dashed line represents the zero-error scenario, and the orange solid line is the best-fit line. Level of significance is indicated by * ($p < 0.05$), ** ($p < 0.01$), *** ($p < 0.001$).

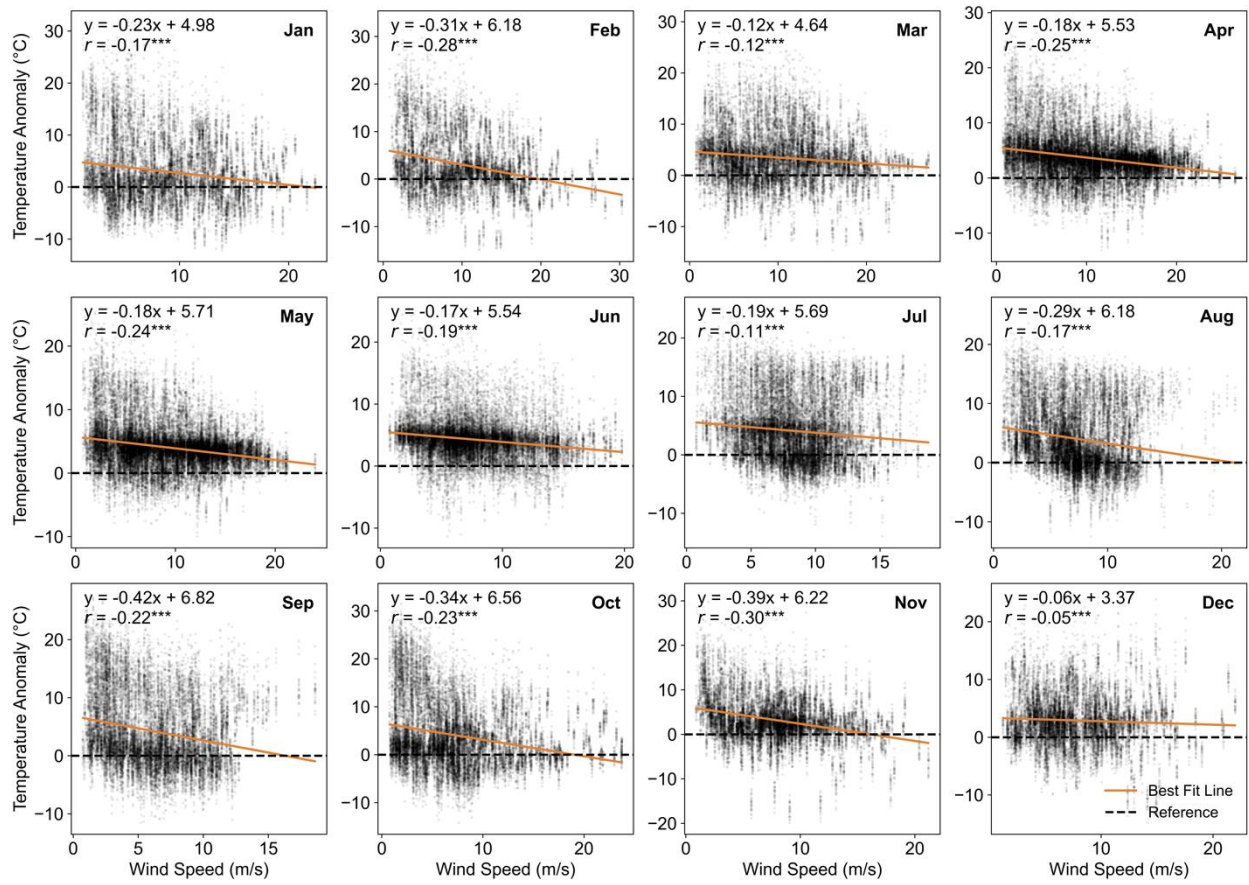


Figure S7. Monthly scatterplots of hourly temperature anomaly and hourly wind speed measurements. The black dashed line represents the zero-error scenario, and the orange solid line is the best-fit line. Level of significance is indicated by * ($p < 0.05$), ** ($p < 0.01$), *** ($p < 0.001$).

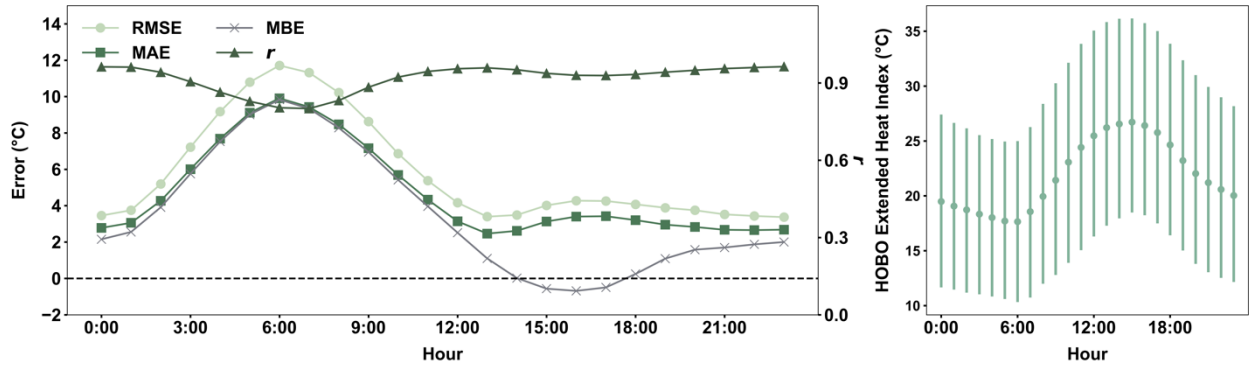


Figure S8. Hourly T_{PA} -derived Heat Index performance and T_{HOBO} -derived Heat Index temperature cycle. Performance metrics of hourly T_{PA} -derived HI measurements for each hour (left). The black dashed line is added as a reference for overestimation and underestimation. Hourly mean (dot) and interquartile range (vertical line) of T_{HOBO} -derived HI temperature for each hour (right).