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Correction

Correction: Miraglio, T., et al. Monitoring LAI, Chlorophylls, and Carotenoids Content of a Woodland Savanna Using Hyperspectral Imagery and 3D Radiative Transfer Modeling. *Remote Sensing* 2020, *12*, 28

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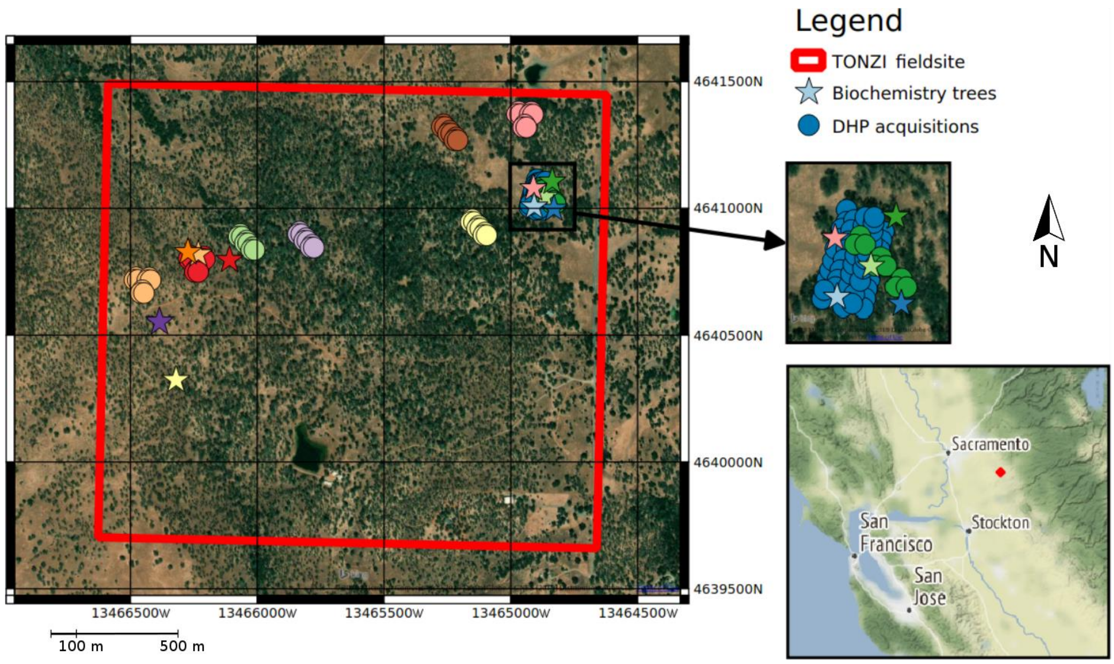
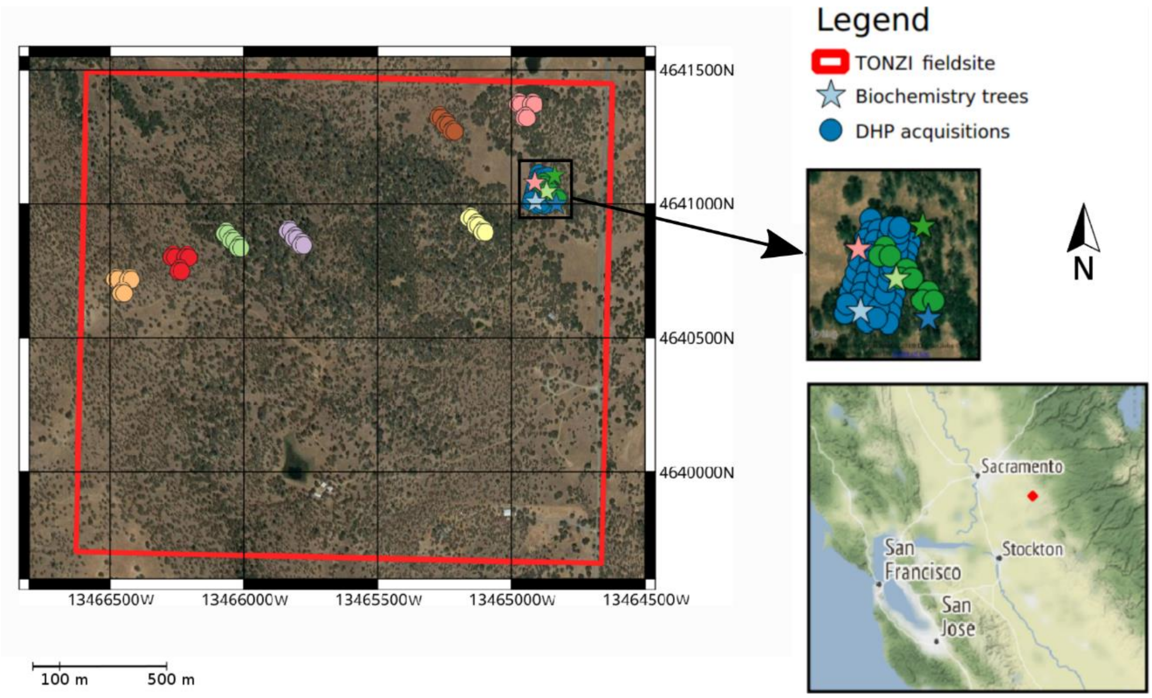
check for updates

The authors are sorry to report that some of the validation data used in their recently published paper [1] were incorrect. The field biochemistry data considered for summer 2013 were associated with incorrect geographic locations corresponding to a previous campaign. The samples from the three biochemistry dates used in this study (summer 2013, fall 2013, summer 2014) were collected from the same trees each time. This led to incorrect analysis of the biochemistry field data for summer 2013, as well as incorrect selection of the summer 2013 pixels needed to confront estimations with our method with *in situ* data. After examination of the correct summer 2013 data, two points (related to two specific trees) showed inappropriate variation of both leaf chlorophylls a+b content(C_{ab}) and leaf carotenoids content (Car) between summer and fall, with a significant increase when it should have been decreasing. As this pattern was inconsistent with expectations of foliar pigments' seasonal phenology, we assumed that the two problematic samples suffered degradation between collection and laboratory analysis, and they were rejected from the study. Because of this, final RMSE and R^2 calculated for C_{ab} and Car estimations, that used data from all dates, were also erroneous. Consequently, the authors wish to make the following corrections to the paper:

Figure 1, replace:



with:



Section 2.2.2., add additional paragraph:

"While leaves from fives trees were originally collected for summer 2013, biochemistry results from two trees were rejected as they showed lower C_{ab} and Car values than those from the same trees in fall 2013 (20 to 37 µg/cm^2 and 34 to 38 µg/cm^2 from summer to fall, respectively). This is contrary to the expected behavior of these pigments, and it was assumed that the leaf samples from those trees suffered degradation between collection and laboratory analysis."

Table 1, replace:

Date	Validation Data LAI	Validation Data Biochemistry
Summer 2013		5
Fall 2013	12	5
Summer 2014	19	5
Summer 2016	21	
Total	52	15

with:

Date	Validation Data LAI	Validation Data Biochemistry
Summer 2013		3
Fall 2013	12	5
Summer 2014	19	5
Summer 2016	21	
Total	52	13

Table 7, replace:

		Fall 2013	**Summer 2014**	**Summer 2016**	**All Dates**
	q	100	100	100	100
LAI [m^2/m^2]	RMSE INT LAI	0.61	0.61	0.63	0.62
	SAM INT LAI	0.66	0.21	0.31	0.39
	NDVI	0.17	0.23	0.24	0.22
	MSAVI2	0.18	0.24	0.29	0.25
		Summer 2013	**Fall 2013**	**Summer 2014**	**All Dates**
	q	300	300	300	300
C_{ab} [μg/cm^2]	RMSE INT CAB	14.2	15.36	6.36	12.6
	SAM INT CAB	13.42	15.91	5.8	12.5
	MCARI2	18.22	14.38	10.57	14.7
	TCARI/OSAVI	12.9	8.09	4.31	9.14
	Maccioni	11.33	9.34	6.12	9.19
	gNDVI	11.4	4.22	2.89	7.21
	GM_94b	8.91	3.86	3.39	5.94
	q	100	400	400	400
Car [μg/cm^2]	RMSE INT CAR	3.03	1.14	2.94	2.71
	SAM INT CAR	7.88	9.31	2.36	7.45
	R515/R570	7.06	4.32	2.74	4.75
	CRI	3.07	3.83	1.91	3.01

with:

		Fall 2013	**Summer 2014**	**Summer 2016**	**All Dates**
	q	100	100	100	100
LAI [m^2/m^2]	RMSE INT LAI	0.61	0.61	0.63	0.62
	SAM INT LAI	0.66	0.21	0.31	0.39
	NDVI	0.17	0.23	0.24	0.22
	MSAVI2	0.18	0.24	0.29	0.25
		Summer 2013	**Fall 2013**	**Summer 2014**	**All Dates**
	q	300	300	300	300
C_{ab} [μg/cm^2]	RMSE INT CAB	12.45	15.36	6.36	11.92
	SAM INT CAB	9.1	15.91	5.8	11.37
	MCARI2	10.44	14.38	10.57	12.15
	TCARI/OSAVI	5.86	8.09	4.31	6.34
	Maccioni	8.38	9.34	6.12	8.02
	gNDVI	9.09	4.22	2.89	5.39
	GM_94b	8.62	3.86	3.39	5.21
	q	400	400	400	400
Car [μg/cm^2]	RMSE INT CAR	0.58	1.14	2.94	1.34
	SAM INT CAR	4.78	9.31	2.36	6.54
	R515/R570	5.74	4.32	2.74	4.01
	CRI	2.87	3.83	1.91	2.89

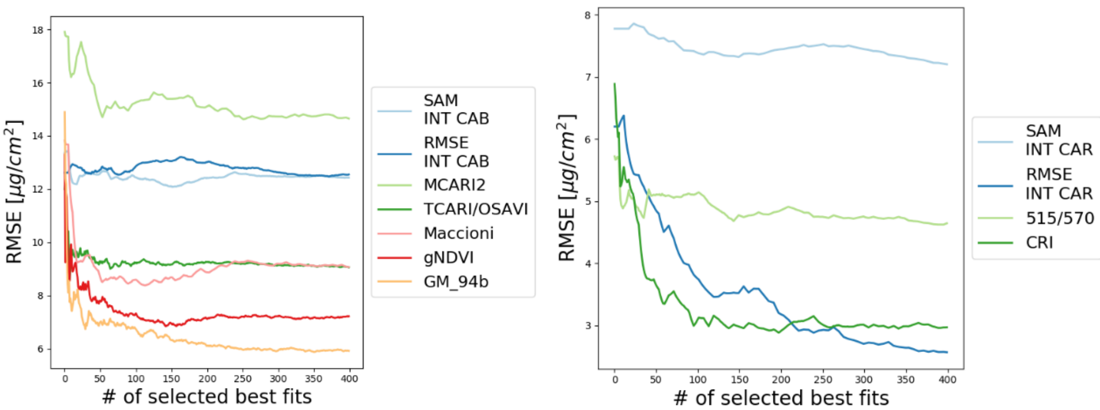
Section 3.3.1, change:

"The RMSE of the criteria for summer 2013 were all rather high, with only GM_94b obtaining a RMSE below 10 μg/cm^2."

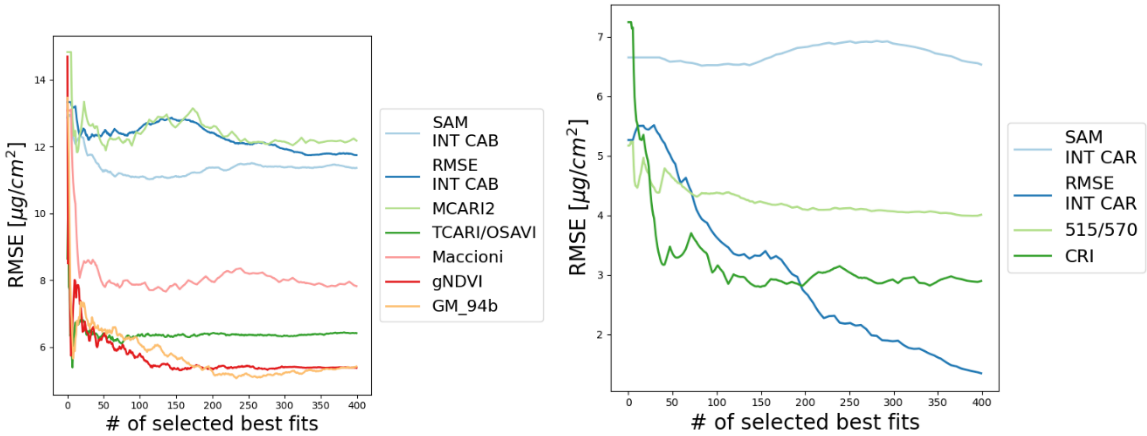
to:

"The lowest RMSE for summer 2013 was obtained with TCARI/OSAVI (5.86 μg/cm^2)."

Figure 8, replace:



with:



Section 3.3.3, rewrite to:

"For C_{ab} at q = 300, apart from DMCARI2, VI differences performed better than methods based on RMSE and SAM (Table 9). GM_94b is the overall best-performing VI, with the lowest RMSE, highest R^2, and lowest STDB (5.21 μg/cm², 0.73, and 3.38 μg/cm², respectively), besting even soil-adjusted VI. When compared to field measurements from all dates, most GM_94b-estimated points are very close to the first bisector, and only one point (pink from summer 2013) is greatly underestimated (Figure 10a).

For Car, at q = 400, the best method is also clear: RMSE INT CAR is the only method to present a low RMSE, a low STDB, and a high R^2 (1.34 μg/cm², 1.06 μg/cm² and 0.59, respectively. See Table 9). The RMSE INT CAR method showed the best performances overall, with estimated values very close to the first bisector (Figure 10b) for all seasons."

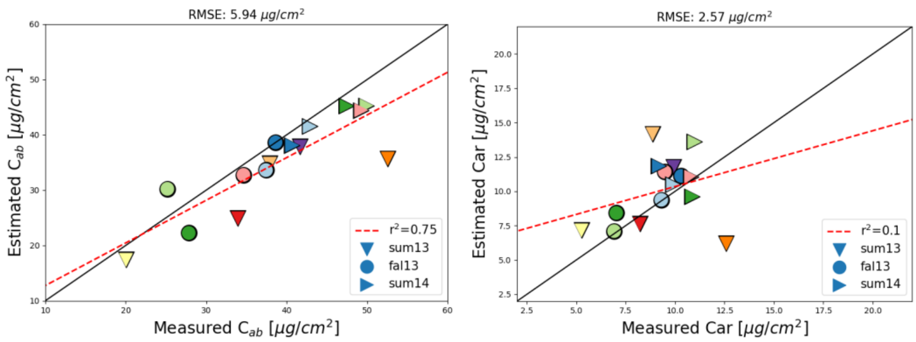
Table 9, replace:

Method	**RMSE [μg/cm²]**	**bias [μg/cm²]**	**STDB [μg/cm²]**	**R^2**
C_{ab}				
RMSE INT CAB	12.6	8.93	6.23	0.15
SAM INT CAB	12.5	5.99	8.66	0.07
MCARI2	14.7	−5.4	11.0	0.01
TCARI/OSAVI	9.14	3.39	4.76	0.15
Maccioni	9.19	4.4	5.22	0.21
gNDVI	7.21	−2.14	5.34	0.44
GM_94b	5.94	−3.81	4.06	0.75
Car				
RMSE INT CAR	2.71	0.7	2.21	0.11
SAM INT CAR	7.45	3.59	4.14	0.32
R515/R570	4.75	−0.26	4.35	0.0
CRI	3.01	0.36	2.09	0.01

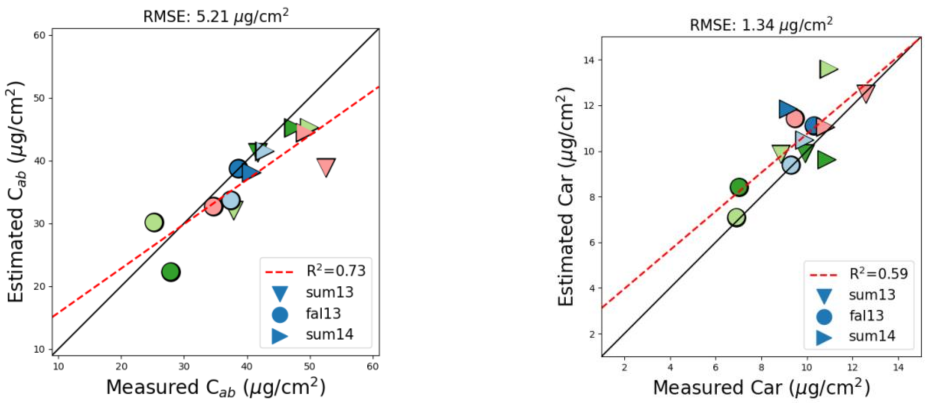
with:

Method	**RMSE [μg/cm^2]**	**bias [μg/cm^2]**	**STDB [μg/cm^2]**	**R^2**
C_{ab}				
RMSE INT CAB	11.92	8.99	5.21	0.14
SAM INT CAB	11.37	7.46	6.05	0.08
MCARI2	12.15	−5.05	8.62	0.01
TCARI/OSAVI	6.34	2.75	4.15	0.48
Maccioni	8.02	4.36	5.03	0.32
gNDVI	5.39	−2.15	3.82	0.61
GM_94b	5.21	−3.21	3.38	0.73
Car				
RMSE INT CAR	1.34	0.79	1.06	0.59
SAM INT CAR	6.53	1.59	4.53	0.29
R515/R570	4.01	−1.26	3.74	0.26
CRI	2.89	−0.2	2.1	0.05

Figure 10, replace:



with:



Section 4.2., update:

"Indeed, in Section 3.3's Table 7, both GM_94b and gNDVI indices could be identified as optimal depending on the date. However, when considering the complete dataset, which includes summer and fall data, GM_94b outperforms gNDVI significantly with a lower RMSE and considerably higher R^2 (Table 9)."

to:

"Indeed, in Section 3.3's Table 7, TCARI/OSAVI, GM_94b and gNDVI indices could be identified as optimal depending on the date. However, when considering the complete dataset, which includes summer and fall data, GM_94b outperforms the others with a lower RMSE and higher R^2 (Table 9)."

Section 4.3, update:

"Carotenoid estimations did not perform that well, even though the estimation RMSE was low (RMSE = 2.57 μg/cm^2, R^2 = 0.1). However, Figure 10b shows that the low R^2 is mostly due to the dark orange point which is, as for C_{ab}, severely underestimated. Further, the foliar Car estimation of the other points appears to be acceptable. Using high-resolution imagery (50 cm), Zarco-Tejada et al. [57] obtained an RMSE below 1.3 μg/cm^2 and R^2 of at most 0.46 when using the SAILH and the FLIGHT radiative transfer models for carotenoid estimation over vineyards. One must also consider that the Car variation range of the present study goes from 5 to 13 μg/cm^2, while the LUT step is only 4 μg/cm^2: despite this, the R^2 values obtained are in line with those obtained by Zarco-Tejada et al. [57].

Another factor that could explain the estimation errors (and specifically the underestimation of the dark orange point's biochemistry) […]"

to:

"Carotenoid estimations also performed well with a low RMSE and high R^2 (RMSE = 1.34 μg/cm^2, R^2 = 0.59). This is similar to the values obtained by Zarco-Tejada et al. [57] using high-resolution imagery (50 cm) over vineyards (RMSE below 1.3 μg/cm^2 and R^2 of at most 0.46 when using the SAILH and the FLIGHT radiative transfer models).

A factor that could explain some estimation errors (and specifically the underestimation of the C_{ab} summer 2013 pink point) […]"

Section 5, update:

"Results from very different site locations in terms of LAI, canopy cover, and tree structure were consistent and showed good accuracy for LAI and leaf C_{ab} retrieval and were also encouraging concerning leaf Car retrieval."

to:

"Results from very different site locations in terms of LAI, canopy cover, and tree structure were consistent and showed good accuracy for LAI and leaf C_{ab} and Car retrieval."

All over the manuscript, update C_{ab} estimation RMSE and R^2 from 5.94 μg/cm^2 and 0.75 to 5.21 μg/cm^2 and 0.73.

All over the manuscript, update Car estimation RMSE and R^2 from 2.57 μg/cm^2 and 0.1 to 1.34 μg/cm^2 and 0.59.

These changes have no material impact on the conclusions of our paper. We apologize to our readers.

Reference

1. Miraglio, T.; Adeline, K.; Huesca, M.; Ustin, S.; Briottet, X. Monitoring LAI, Chlorophylls, and Carotenoids Content of a Woodland Savanna Using Hyperspectral Imagery and 3D Radiative Transfer Modeling. *Remote Sens.* **2020**, *12*, 28. [CrossRef]