Martin H, Monnet J-M, De Boisvilliers M, Chevalier R, Villar M (2020).
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Supplementary Material

Tab. S1 – Overall accuracy (%) and standard deviation of the metrics groups tested according to crown proportion and Gaussian filter. Metrics groups tested are Tree metrics (T), Lidar metrics (L) and Orthophotos indices (O). Combinations tested are T+L+O, T+L, L+O, T+O, T, L, O.

Gaussian filter	Crown_ prop	T/V tree no.	TLO	TLOsd	TL	TLsd	LO	LOsd	TO	TOsd	T	Tsd	L	Lsd	O	Osd
0.9	0.9	100.0	91.6	11.5	84.4	12.5	82.8	14.2	92.5	12.1	88.8	11.5	80.4	13.8	85.2	12.6
0.9	0.8	192.0	93.5	3.1	92.6	2.8	88.1	4.7	93.7	2.9	92.5	2.7	85.0	4.8	87.7	4.6
0.9	0.7	247.0	93.2	2.1	93.0	2.2	86.3	3.0	93.0	2.1	92.9	2.3	84.0	3.8	85.3	3.6
0.9	0.6	273.0	92.7	2.3	91.2	3.0	86.1	2.8	93.0	2.3	91.9	2.3	83.4	3.9	86.4	2.8
0.9	0.5	287.0	90.7	3.0	89.9	2.4	86.3	3.4	90.6	2.9	89.6	2.8	83.4	4.0	85.5	2.9
0.9	0.4	294.0	89.0	2.8	88.5	2.8	87.0	3.2	89.2	2.9	88.4	2.5	82.7	3.7	85.4	3.2
0.9	0.3	307.0	87.6	2.8	87.2	2.9	84.8	2.8	88.2	2.6	86.5	2.9	81.4	4.0	83.5	3.5
0.9	0.2	313.0	85.6	3.1	85.1	2.8	84.4	3.0	86.4	2.8	85.0	2.6	79.5	3.3	82.8	3.5
0.9	0.1	315.0	85.0	3.3	84.9	2.7	84.2	3.3	86.4	2.3	83.9	2.8	80.9	3.5	83.5	3.1
0.8	0.9	102.0	90.6	10.6	86.1	14.8	85.3	11.9	90.7	10.7	89.3	9.0	79.2	13.8	85.1	12.2
0.8	0.8	196.0	93.1	2.8	92.3	3.5	86.4	4.3	92.7	3.7	92.4	3.0	83.9	4.2	86.2	4.3
0.8	0.7	251.0	93.5	2.2	93.4	2.1	85.8	3.9	93.5	1.9	93.6	2.4	84.6	3.6	85.9	3.2
0.8	0.6	278.0	92.7	1.9	91.5	2.1	85.8	3.2	92.7	2.1	92.1	2.4	83.4	3.3	85.9	3.0
0.8	0.5	290.0	91.1	2.2	90.7	2.5	86.3	3.4	91.6	2.7	91.0	2.6	83.5	3.5	84.9	2.8
0.8	0.4	298.0	89.7	2.6	88.2	2.8	85.3	3.0	90.5	2.2	88.9	2.8	83.2	3.8	84.0	3.5
0.8	0.3	307.0	82.6	3.1	86.0	2.7	84.9	3.0	87.3	2.8	85.9	2.9	82.2	3.5	83.1	3.1
0.8	0.2	313.0	85.8	2.6	84.9	2.7	83.9	3.5	85.3	3.6	84.4	2.8	80.9	3.9	83.2	3.3
0.8	0.1	315.0	85.3	2.8	84.5	2.9	83.8	3.3	85.9	2.9	84.5	3.2	81.1	3.2	83.5	3.3
0.7	0.9	107.0	92.6	8.9	90.3	10.6	82.0	13.0	92.9	8.2	93.2	8.5	78.6	11.9	85.1	11.9
0.7	0.8	205.0	93.6	2.7	92.8	2.9	85.2	4.9	93.7	2.8	93.8	2.7	81.6	4.5	86.7	4.3
0.7	0.7	256.0	93.9	2.3	92.9	2.5	85.7	4.0	94.3	2.7	93.1	2.7	81.9	4.0	84.5	4.1
0.7	0.6	280.0	92.7	2.3	91.3	2.2	86.1	3.6	93.1	2.2	91.4	2.7	82.2	3.6	85.9	2.7
0.7	0.5	291.0	92.1	2.6	91.1	2.1	85.6	2.8	92.5	2.1	91.7	2.2	82.1	3.3	85.2	3.2
0.7	0.4	299.0	90.0	3.0	87.2	2.9	84.7	3.3	90.0	2.7	88.2	2.4	81.2	3.3	84.6	2.8
0.7	0.3	308.0	88.1	2.4	86.1	2.8	84.5	3.8	89.3	2.7	86.7	2.6	80.3	3.4	84.6	3.0
0.7	0.2	313.0	86.8	2.9	84.5	3.0	84.5	3.4	87.0	3.1	84.4	2.9	79.4	3.4	83.7	2.9
0.7	0.1	315.0	86.9	3.0	84.9	2.6	84.1	3.0	88.1	2.7	85.0	2.9	79.2	3.1	83.8	2.8
0.6	0.9	113.0	93.0	8.1	87.6	10.4	82.7	11.0	89.1	8.0	87.7	9.9	78.7	11.4	86.9	11.0
0.6	0.8	209.0	94.0	2.6	92.4	2.9	84.4	4.8	93.6	2.5	93.1	2.5	79.8	4.6	86.3	4.6
0.6	0.7	257.0	93.9	2.6	92.9	2.5	84.8	3.7	94.1	2.5	93.5	2.0	81.7	4.0	84.8	3.5
0.6	0.6	282.0	93.2	2.5	91.5	2.6	84.6	3.4	93.0	2.2	92.0	2.2	82.4	3.9	85.0	3.1
0.6	0.5	292.0	91.4	2.5	90.3	2.4	85.9	3.8	91.7	2.3	90.9	2.2	81.3	3.9	86.1	3.4
0.6	0.4	300.0	88.6	2.7	87.9	2.4	84.9	2.9	89.6	2.2	88.3	2.4	79.8	3.6	85.1	2.8

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Gaussian filter	Crown_ prop	T/V tree no.	TLO	TLOsd	TL	TLsd	LO	LOsd	TO	TOsd	T	Tsd	L	Lsd	O	Osd
0.6	0.3	309.0	87.6	3.0	86.9	2.8	84.7	3.6	88.2	2.8	86.6	3.1	79.4	3.7	84.5	3.1
0.6	0.2	313.0	86.9	3.1	84.5	2.3	84.2	3.3	87.0	3.1	84.1	3.0	77.6	3.5	83.7	3.5
0.6	0.1	315.0	86.3	3.0	84.5	2.7	83.8	2.8	87.0	2.9	83.9	3.0	78.1	3.6	83.5	3.0
0.5	0.9	119.0	91.0	7.6	88.4	9.3	81.1	9.9	92.2	6.2	86.7	8.4	84.3	9.0	81.3	11.7
0.5	0.8	219.0	94.8	2.5	93.9	2.4	86.7	5.0	94.8	2.4	94.7	2.3	82.7	4.5	86.3	4.8
0.5	0.7	260.0	92.9	2.6	92.2	2.4	87.8	4.3	92.9	2.5	92.7	2.1	82.7	3.7	84.8	4.1
0.5	0.6	283.0	91.3	2.2	89.2	2.4	86.6	3.2	91.5	2.2	90.3	2.5	82.3	3.6	86.3	3.6
0.5	0.5	295.0	91.5	2.4	90.1	2.4	86.6	3.1	91.4	2.5	90.7	2.7	81.2	4.1	86.9	3.5
0.5	0.4	301.0	88.8	2.9	87.3	2.6	85.3	3.4	89.7	2.7	88.3	2.6	80.5	3.4	85.8	3.7
0.5	0.3	309.0	87.0	2.8	86.0	2.9	85.6	3.4	87.9	2.7	87.0	2.7	78.8	3.7	84.8	3.3
0.5	0.2	313.0	86.5	2.8	85.7	2.5	84.6	3.1	87.3	2.8	85.4	2.9	79.3	3.5	84.8	2.6
0.5	0.1	315.0	86.2	3.3	85.0	3.0	84.1	3.6	87.1	2.9	85.0	2.7	78.2	3.8	84.0	3.3
0.4	0.9	130.0	90.4	7.3	89.8	7.8	83.4	9.1	93.0	5.5	89.9	8.0	82.0	7.9	85.7	8.5
0.4	0.8	230.0	91.6	2.8	91.5	3.0	87.7	4.5	93.0	2.5	91.9	2.8	83.5	4.5	86.9	5.3
0.4	0.7	267.0	92.5	3.0	90.7	2.4	87.9	3.9	93.1	2.8	90.8	2.5	82.9	4.2	85.7	3.9
0.4	0.6	286.0	90.6	2.6	89.7	3.2	86.3	3.7	91.0	1.9	90.7	2.5	81.3	3.7	86.2	3.5
0.4	0.5	297.0	90.3	2.5	89.3	2.8	85.1	3.6	90.8	2.5	90.3	3.1	81.8	3.7	85.5	3.6
0.4	0.4	304.0	89.2	2.7	85.6	3.1	84.8	2.7	89.4	2.8	87.5	2.9	82.0	3.7	85.2	3.2
0.4	0.3	309.0	88.1	3.0	86.7	3.2	84.3	3.1	89.7	2.9	88.0	2.6	82.0	3.6	84.8	3.3
0.4	0.2	313.0	86.8	2.8	84.6	3.2	82.7	2.9	88.3	2.4	86.0	2.7	80.9	3.7	83.9	3.0
0.4	0.1	315.0	86.8	2.9	84.6	2.6	83.3	3.3	87.1	3.1	85.4	2.8	81.6	3.3	84.2	2.9
0.3	0.9	148.0	88.9	6.2	88.3	6.1	NA	NA	89.4	5.5	89.4	6.0	NA	NA	NA	NA
0.3	0.8	237.0	93.6	2.3	94.2	2.3	NA	NA	93.8	2.1	93.7	2.2	NA	NA	NA	NA
0.3	0.7	274.0	91.5	2.3	91.0	2.7	NA	NA	91.7	2.4	92.1	2.1	NA	NA	NA	NA
0.3	0.6	293.0	89.0	2.7	89.1	2.3	NA	NA	88.7	2.4	88.7	2.7	NA	NA	NA	NA
0.3	0.5	301.0	86.9	2.7	86.9	2.3	NA	NA	87.2	2.5	87.2	2.5	NA	NA	NA	NA
0.3	0.4	305.0	85.6	3.2	84.9	2.8	NA	NA	85.2	3.1	85.3	2.7	NA	NA	NA	NA
0.3	0.3	310.0	85.8	3.5	86.2	2.5	NA	NA	85.6	3.0	85.7	2.9	NA	NA	NA	NA
0.3	0.2	314.0	85.1	2.7	85.8	3.1	NA	NA	85.0	3.0	85.5	2.9	NA	NA	NA	NA
0.3	0.1	315.0	84.8	3.4	84.9	2.9	NA	NA	84.6	3.1	84.7	2.7	NA	NA	NA	NA
0.2	0.9	171.0	86.9	4.6	88.0	5.2	NA	NA	88.1	5.3	88.2	4.9	NA	NA	NA	NA
0.2	0.8	249.0	92.5	2.6	92.8	2.2	NA	NA	93.0	2.2	93.2	2.2	NA	NA	NA	NA
0.2	0.7	284.0	89.3	2.5	89.5	2.2	NA	NA	89.2	2.5	89.4	2.5	NA	NA	NA	NA
0.2	0.6	297.0	87.8	3.1	88.2	3.1	NA	NA	88.0	3.4	87.8	3.2	NA	NA	NA	NA
0.2	0.5	305.0	88.7	3.0	88.4	3.8	NA	NA	87.8	3.4	88.2	3.1	NA	NA	NA	NA
0.2	0.4	312.0	86.6	3.2	86.9	2.6	NA	NA	87.0	2.9	86.3	3.0	NA	NA	NA	NA
0.2	0.3	313.0	86.3	3.0	86.3	3.0	NA	NA	86.1	3.7	86.8	3.0	NA	NA	NA	NA
0.2	0.2	314.0	86.6	2.7	86.8	3.0	NA	NA	86.5	3.6	86.6	3.0	NA	NA	NA	NA
0.2	0.1	315.0	85.2	3.1	85.2	3.1	NA	NA	85.2	2.9	85.7	3.0	NA	NA	NA	NA

Gaussian filter	Crown_ prop	T/V tree no.	TLO	TLOsd	TL	TLsd	LO	LOsd	TO	TOsd	T	Tsd	L	Lsd	O	Osd
0.1	0.9	212.0	85.5	3.7	85.6	3.9	NA	NA	85.3	3.8	85.8	4.0	NA	NA	NA	NA
0.1	0.8	271.0	85.0	3.3	85.1	2.7	NA	NA	85.1	3.1	85.7	2.8	NA	NA	NA	NA
0.1	0.7	297.0	84.7	3.3	84.5	3.1	NA	NA	84.8	3.5	85.2	2.9	NA	NA	NA	NA
0.1	0.6	309.0	83.6	3.2	82.9	3.4	NA	NA	83.5	3.1	83.3	2.9	NA	NA	NA	NA
0.1	0.5	312.0	82.6	3.1	83.3	3.2	NA	NA	83.1	3.1	82.9	2.4	NA	NA	NA	NA
0.1	0.4	314.0	84.3	3.0	83.8	2.9	NA	NA	84.7	3.1	84.8	3.3	NA	NA	NA	NA
0.1	0.3	314.0	83.5	3.3	82.8	3.2	NA	NA	83.1	3.4	83.0	3.0	NA	NA	NA	NA
0.1	0.2	314.0	82.1	3.7	83.1	3.3	NA	NA	82.3	3.8	82.3	3.6	NA	NA	NA	NA
0.1	0.1	315.0	83.6	3.0	83.9	2.9	NA	NA	83.8	3.2	83.8	3.3	NA	NA	NA	NA