Supplementary Material — Learning to Estimate Two Dense Depths from LiDAR and Event Data*

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1 Linear vs Log Scale

In this article, we use a linear scale for the event sensor in CARLA rather than the default logarithmic scale. We argue here that the logarithmic scale amplifies too much the creation of events in the dark areas of the image, as a very slight change in the intensity results in a large logarithmic intensity change, thus triggering an event. On the contrary, in the clearer areas, little to no events are produced, as a large intensity change is necessary to generate a logarithmic difference sufficient to trigger an event. An illustration of this phenomenon is given in Fig. 1 and Fig. 2.

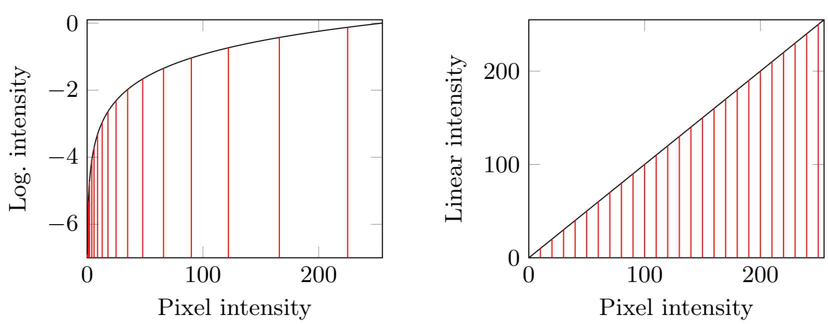

Fig. 1: Comparison of the triggering of events when the logarithmic and the linear scales are used. The logarithmic intensity in CARLA is computed as $\ln(I/255 + 0.001)$, where I is the pixel intensity. Each red vertical line denotes the triggering of an event, with thresholds set to 0.3 for the logarithmic scale, and 10 for the linear scale.

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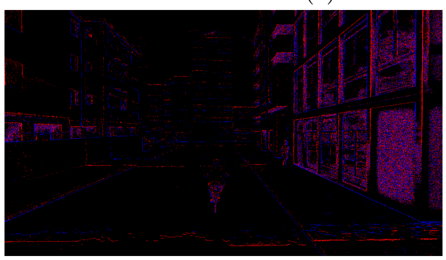
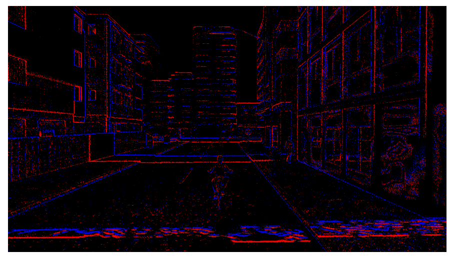
(a) Generated RGB image



(b) Generated events with log. scale



(c) Generated events with linear scale

Fig. 2: Visual comparison of the triggering of events when the logarithmic and the linear scales are used for a urban scene in CARLA. With the logarithmic scale, notice how the dark building on the right generates a high amount of events compared to the other buildings, and how details such as road markings or shadows are mostly lost. In comparison, with the linear scale, notice how the events are better distributed in the image.

2 Example Data from our SLED Dataset

We showcase in Fig. 3 some example data from our SLED dataset. In particular, we display here illustrations from two very different recordings: one on *Town01* during daytime, and a second one on *Town07* during nighttime.

3 Detailed Results on our SLED Dataset

As a complement to the summarized results shown in Table 2 of the main article on our SLED dataset, we provide here the full results for every recording on both maps of the testing set, *Town01* and *Town03*. These results are given in Table 1 and 2 respectively.

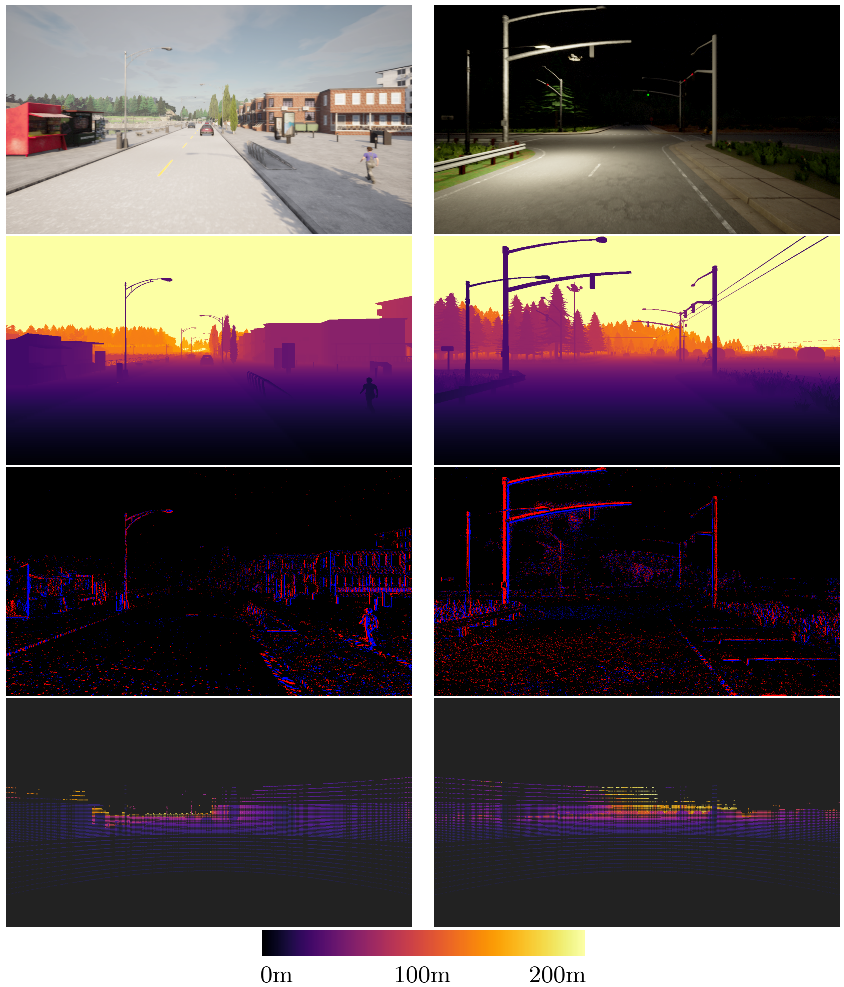


Fig. 3: Example data from the "Town01_04" (left) and "Town07_00" (right) sequences from our SLED dataset. Top to bottom: RGB image; depth image; events; projected LiDAR points; color scale.

Table 1: Detailed results for recordings on *Town01* for the SLED dataset.

Sequence	Cutoff	Dense depths errors				Sparse depths errors				Depth change map errors	
		On D_{bf}		On D_{af}		On D_{bf}		On D_{af}		Absolute error	Correctly classified events (with a threshold of ±1m)
		Raw	Rel.	Raw	Rel.	NN	$ALED_S$	NN	$ALED_S$		
	10m	1.13m	22.35%	1.23m	24.58%	1.00m	1.02m	1.73m	1.15m	1.35m	94.84%
	20m	3.58m	34.69%	3.82m	37.37%	1.46m	1.44m	2.62m	1.63m	3.55m	87.88%
Town01_00	30m	4.47m	36.48%	4.77m	39.26%	1.66m	1.75m	2.97m	2.02m	4.30m	85.19%
	100m	5.37m	34.57%	5.85m	37.37%	2.42m	3.08m	4.54m	3.82m	5.33m	82.03%
	200m	6.09m	23.39%	6.59m	25.28%	7.14m	4.17m	9.71m	5.35m	7.08m	80.31%
	10m	0.85m	12.58%	0.82m	12.27%	1.58m	1.27m	2.45m	1.43m	1.68m	94.23%
	20m	2.50m	23.27%	2.74m	24.94%	4.94m	5.82m	6.68m	6.50m	4.69m	89.96%
Town01_01	30m	3.24m	25.24%	3.53m	27.05%	4.73m	6.67m	6.36m	7.45m	5.04m	88.35%
	100m	9.87m	34.86%	10.25m	36.56%	4.69m	6.62m	6.34m	7.36m	5.33m	86.03%
	200m	8.23m	22.50%	8.55m	23.61%	13.74m	9.88m	16.33m	11.39m	8.00m	79.91%
	10m	0.51m	9.52%	0.53m	9.69%	0.48m	0.51m	0.72m	0.61m	0.73m	93.64%
	20m	1.00m	10.34%	1.04m	10.65%	0.47m	0.65m	0.80m	0.71m	1.48m	90.29%
Town01_02	30m	1.96m	12.73%	2.03m	13.14%	0.57m	0.92m	0.98m	0.99m	2.54m	85.05%
	100m	4.23m	15.80%	4.30m	16.14%	1.05m	1.76m	1.61m	1.84m	4.13m	79.08%
	200m	5.40m	14.54%	5.47m	14.84%	1.57m	2.09m	2.17m	2.19m	6.11m	78.12%
	10m	0.66m	10.23%	0.69m	11.09%	0.66m	0.53m	0.98m	0.64m	0.59m	94.96%
	20m	1.16m	11.44%	1.22m	12.21%	0.76m	0.62m	1.34m	0.75m	1.46m	91.42%
Town01_03	30m	1.69m	12.79%	1.73m	13.44%	0.86m	0.75m	1.54m	0.89m	2.71m	87.88%
	100m	2.70m	12.15%	2.80m	12.73%	1.39m	1.47m	2.51m	1.70m	4.01m	82.84%
	200m	2.85m	9.13%	2.93m	9.55%	2.47m	1.90m	3.84m	2.16m	6.05m	81.50%
	10m	0.95m	17.55%	1.17m	22.09%	0.94m	0.96m	1.85m	1.40m	2.22m	84.93%
	20m	1.29m	16.70%	1.56m	20.64%	1.28m	1.35m	2.37m	1.74m	2.80m	80.03%
Town01_04	30m	1.54m	16.58%	1.82m	20.28%	1.44m	1.64m	2.62m	2.03m	2.98m	78.99%
	100m	2.14m	16.60%	2.45m	20.07%	2.04m	2.37m	3.45m	2.82m	3.44m	77.08%
	200m	2.05m	10.38%	2.25m	12.48%	4.01m	3.15m	5.63m	3.63m	4.94m	75.44%
	10m	0.42m	7.40%	0.52m	9.83%	0.96m	0.78m	1.93m	1.15m	0.99m	93.63%
	20m	0.88m	8.85%	0.96m	10.61%	0.79m	1.13m	1.51m	1.33m	1.41m	88.30%
Town01_05	30m	1.55m	10.45%	1.59m	11.77%	0.84m	1.44m	1.61m	1.60m	2.15m	80.29%
	100m	3.41m	12.68%	3.49m	13.74%	1.76m	2.64m	2.94m	2.92m	4.59m	71.36%
	200m	3.67m	10.88%	3.87m	11.84%	4.76m	4.02m	6.17m	4.79m	6.35m	70.24%
	10m	0.53m	8.25%	0.63m	10.33%	0.72m	0.89m	1.44m	1.25m	1.95m	90.47%
	20m	1.02m	10.18%	1.17m	12.19%	0.84m	1.28m	1.64m	1.64m	2.94m	85.40%
Town01_06	30m	1.53m	11.33%	1.69m	13.19%	0.98m	1.91m	1.91m	2.26m	3.78m	80.78%
	100m	2.96m	13.01%	3.24m	14.88%	1.66m	3.85m	3.07m	4.48m	5.64m	76.59%
	200m	3.49m	8.83%	3.79m	10.06%	12.55m	7.46m	13.97m	8.47m	9.00m	74.50%
	10m	0.99m	16.01%	1.11m	17.89%	0.41m	0.74m	0.76m	0.90m	1.32m	86.15%
	20m	1.76m	18.57%	1.93m	20.61%	0.55m	0.93m	1.00m	1.06m	2.61m	80.28%
Town01_07	30m	2.02m	18.45%	2.19m	20.31%	0.77m	1.27m	1.30m	1.40m	3.16m	78.14%
	100m	2.72m	18.43%	2.92m	20.17%	1.32m	2.12m	2.06m	2.31m	4.06m	75.73%
	200m	2.45m	13.42%	2.64m	14.67%	3.11m	2.67m	4.13m	2.94m	5.28m	75.12%
	10m	1.06m	17.74%	1.25m	20.76%	0.85m	0.90m	1.84m	1.21m	3.66m	88.92%
	20m	1.69m	19.34%	1.90m	22.09%	1.04m	1.45m	2.13m	1.80m	5.79m	80.47%
Town01_08	30m	2.17m	19.47%	2.39m	21.96%	1.23m	2.05m	2.46m	2.41m	6.51m	76.56%
	100m	3.48m	19.63%	3.77m	21.92%	2.05m	4.06m	3.80m	4.69m	8.25m	72.25%
	200m	4.50m	14.57%	4.79m	16.20%	11.21m	8.22m	13.02m	9.16m	12.81m	70.12%
	10m	0.58m	11.49%	0.68m	14.03%	1.61m	1.26m	3.53m	1.71m	2.23m	87.48%
	20m	1.15m	12.58%	1.30m	14.83%	3.03m	2.45m	4.80m	2.92m	4.46m	80.01%
Town01_09	30m	1.92m	14.38%	2.05m	16.28%	4.99m	3.81m	6.96m	4.22m	6.74m	70.78%
	100m	2.69m	14.98%	2.84m	16.72%	6.69m	5.57m	8.88m	6.03m	8.07m	67.77%
	200m	4.20m	10.91%	4.38m	12.04%	10.05m	8.53m	12.91m	9.29m	10.19m	62.17%
	10m	3.24m	47.08%	3.29m	47.53%	0.66m	0.68m	0.98m	0.78m	1.96m	94.32%
	20m	6.01m	61.31%	6.14m	62.28%	0.73m	0.87m	1.17m	0.97m	3.94m	92.32%
Town01_10	30m	6.99m	60.05%	7.15m	61.07%	0.83m	1.06m	1.37m	1.19m	4.17m	91.54%
	100m	11.98m	61.20%	12.18m	62.20%	1.25m	1.83m	2.04m	2.00m	4.58m	89.85%
	200m	10.98m	44.63%	11.14m	45.36%	3.93m	2.46m	4.82m	2.70m	6.01m	88.36%
	10m	0.96m	13.78%	1.07m	15.43%	1.72m	1.31m	2.19m	1.40m	1.64m	93.85%
	20m	3.95m	30.55%	4.31m	33.37%	2.07m	1.79m	2.80m	1.94m	2.65m	89.14%
Town01_11	30m	6.32m	37.96%	6.88m	41.40%	2.41m	2.38m	3.45m	2.60m	3.87m	85.82%
	100m	7.36m	37.58%	8.05m	41.06%	3.34m	3.45m	5.07m	4.02m	4.96m	83.09%
	200m	9.51m	28.98%	10.46m	31.71%	8.61m	5.50m	11.29m	6.93m	6.89m	81.48%
	10m	2.22m	40.37%	2.58m	47.49%	0.50m	0.98m	0.99m	1.23m	1.62m	84.69%
	20m	2.99m	39.47%	3.30m	45.12%	1.56m	2.58m	2.58m	2.93m	2.64m	81.92%
Town01_12	30m	3.48m	39.46%	3.78m	44.69%	2.01m	3.83m	3.28m	4.16m	3.32m	80.22%
	100m	3.82m	38.13%	4.11m	43.02%	2.39m	4.40m	3.81m	4.71m	3.74m	79.38%
	200m	3.48m	28.58%	3.77m	32.24%	8.63m	5.92m	10.74m	6.56m	5.18m	78.55%
	10m	1.81m	29.12%	1.99m	32.24%	4.31m	3.96m	6.71m	4.61m	3.00m	92.10%
	20m	2.80m	30.46%	3.02m	33.27%	3.59m	3.85m	5.92m	4.41m	4.42m	82.45%
Town01_13	30m	3.50m	30.39%	3.73m	32.91%	3.75m	4.49m	6.22m	4.98m	5.27m	77.92%
	100m	4.26m	28.98%	4.56m	31.38%	4.42m	5.55m	7.46m	6.19m	6.54m	73.83%
	200m	4.43m	21.75%	4.83m	23.62%	13.17m	7.64m	17.04m	9.09m	8.72m	72.78%
	10m	1.09m	17.97%	1.28m	21.84%	0.90m	1.09m	1.91m	1.37m	1.92m	91.20%
	20m	1.42m	17.89%	1.62m	21.19%	1.33m	1.40m	2.63m	1.68m	2.65m	88.08%
Town01_14	30m	1.51m	17.72%	1.71m	20.91%	1.53m	1.58m	2.92m	1.88m	2.89m	87.25%
	100m	2.27m	16.25%	2.51m	18.99%	2.58m	3.03m	4.49m	3.45m	3.79m	83.32%
	200m	2.16m	10.10%	2.34m	11.74%	6.32m	4.65m	8.85m	5.17m	5.57m	80.79%
	10m	1.01m	20.03%	1.10m	21.58%	0.92m	1.23m	1.72m	1.49m	1.25m	91.74%
	20m	1.34m	19.14%	1.45m	20.60%	1.39m	1.62m	2.51m	1.91m	2.28m	86.31%
Town01_15	30m	1.67m	19.04%	1.82m	20.55%	1.43m	1.75m	2.62m	2.05m	2.60m	84.81%
	100m	2.40m	18.03%	2.61m	19.46%	2.15m	2.71m	3.66m	3.16m	3.42m	81.41%
	200m	2.13m	11.60%	2.31m	12.53%	4.32m	3.39m	6.02m	3.93m	4.81m	80.28%
	10m	0.51m	8.67%	0.58m	10.18%	0.96m	1.00m	1.81m	1.37m	1.50m	88.09%
	20m	0.87m	9.42%	0.99m	10.94%	0.99m	1.11m	1.82m	1.40m	2.25m	84.43%
Town01_16	30m	1.14m	9.72%	1.26m	11.13%	1.13m	1.38m	2.11m	1.68m	2.71m	81.61%
	100m	2.34m	10.97%	2.51m	12.27%	1.95m	2.82m	3.26m	3.15m	5.41m	76.30%
	200m	2.19m	7.28%	2.33m	8.12%	4.89m	3.60m	6.46m	4.03m	7.75m	75.00%
	10m	3.84m	66.60%	4.07m	71.45%	8.69m	12.36m	12.83m	14.03m	13.05m	87.20%
	20m	3.80m	57.35%	4.02m	61.41%	5.08m	9.33m	7.61m	10.43m	10.31m	83.69%
Town01_17	30m	4.48m	56.21%	4.71m	60.01%	4.21m	11.31m	6.38m	12.28m	9.93m	81.53%
	100m	5.18m	54.61%	5.43m	58.23%	4.00m	12.38m	6.06m	13.31m	9.75m	80.13%
	200m	7.00m	32.38%	7.39m	34.51%	37.01m	20.46m	39.95m	22.17m	14.48m	72.83%
	10m	0.93m	17.13%	1.15m	21.68%	1.61m	1.20m	3.35m	1.83m	3.60m	81.59%
	20m	1.10m	15.39%	1.32m	19.13%	1.78m	1.34m	3.44m	1.85m	3.93m	78.11%
Town01_18	30m	1.27m	15.00%	1.49m	18.46%	1.86m	1.48m	3.52m	1.99m	4.18m	76.12%
	100m	3.09m	15.07%	3.47m	17.96%	3.02m	3.26m	5.47m	4.62m	6.45m	67.96%
	200m	3.35m	11.42%	3.79m	13.58%	5.04m	4.87m	7.86m	6.93m	9.06m	67.02%
	10m	0.37m	6.11%	0.41m	6.94%	0.77m	0.74m	1.33m	1.02m	1.18m	90.21%
	20m	0.96m	8.47%	1.02m	9.25%	0.68m	0.90m	1.16m	1.05m	2.33m	78.79%
Town01_19	30m	1.57m	10.21%	1.66m	10.98%	0.82m	1.35m	1.38m	1.51m	3.32m	75.04%
	100m	2.59m	11.56%	2.70m	12.29%	1.27m	2.31m	1.94m	2.49m	4.39m	71.75%
	200m	2.40m	8.63%	2.50m	9.18%	2.64m	2.79m	3.26m	2.98m	5.84m	71.37%

Table 2: Detailed results for recordings on *Town03* for the SLED dataset.

Sequence	Cutoff	Dense depths errors				Sparse depths errors				Depth change map errors	
		On D_{bf}		On D_{af}		On D_{bf}		On D_{af}		Absolute error	Correctly classified events (with a threshold of ±1m)
		Raw	Rel.	Raw	Rel.	NN	$ALED_S$	NN	$ALED_S$		
	10m	0.63m	11.61%	0.71m	13.23%	0.45m	0.25m	0.45m	0.30m	0.14m	99.93%
	20m	3.27m	26.39%	3.31m	27.51%	0.45m	0.32m	0.49m	0.40m	0.22m	99.76%
Town03_00	30m	4.87m	31.32%	4.91m	32.29%	0.48m	0.36m	0.54m	0.44m	0.30m	99.62%
	100m	8.39m	35.65%	8.53m	36.67%	0.87m	0.89m	1.01m	0.99m	0.73m	98.06%
	200m	10.28m	25.56%	10.29m	26.17%	3.90m	2.51m	4.14m	2.66m	1.32m	92.99%
	10m	0.59m	11.69%	0.63m	12.29%	0.44m	0.43m	0.45m	0.49m	0.14m	99.65%
	20m	1.60m	15.63%	1.68m	16.43%	0.60m	0.62m	0.77m	0.66m	1.76m	97.13%
Town03_01	30m	3.19m	21.06%	3.34m	22.05%	0.88m	1.02m	1.22m	1.07m	2.94m	94.33%
	100m	5.29m	22.74%	5.67m	24.01%	1.87m	2.40m	2.96m	2.81m	4.71m	88.91%
	200m	7.08m	16.06%	7.41m	16.92%	5.15m	3.91m	6.91m	4.82m	7.17m	85.29%
	10m	0.29m	4.45%	0.33m	4.99%	0.72m	0.41m	1.17m	0.59m	1.03m	96.81%
	20m	0.65m	6.10%	0.73m	6.81%	1.06m	0.65m	2.08m	0.88m	2.80m	91.20%
Town03_02	30m	0.95m	6.95%	1.09m	7.86%	1.74m	1.10m	3.26m	1.43m	3.61m	87.28%
	100m	1.83m	7.45%	2.07m	8.37%	2.93m	2.72m	5.36m	3.48m	4.97m	75.93%
	200m	1.75m	5.37%	2.00m	6.05%	4.62m	3.47m	7.31m	4.49m	6.40m	75.65%
	10m	0.31m	4.41%	0.38m	5.46%	0.63m	0.38m	0.95m	0.46m	1.12m	96.29%
	20m	1.88m	13.42%	2.08m	15.21%	0.70m	0.63m	1.36m	0.79m	3.83m	79.65%
Town03_03	30m	2.62m	14.96%	2.79m	16.40%	0.82m	1.03m	1.58m	1.17m	3.83m	76.22%
	100m	3.54m	15.53%	3.71m	16.76%	1.65m	2.35m	2.75m	2.53m	4.03m	73.98%
	200m	4.35m	14.96%	4.53m	16.10%	2.48m	2.89m	3.63m	3.10m	5.16m	73.74%
	10m	0.41m	5.77%	0.43m	6.19%	0.41m	0.45m	0.66m	0.54m	1.22m	93.05%
	20m	1.01m	9.11%	1.06m	9.67%	0.87m	0.75m	1.43m	0.83m	4.22m	83.42%
Town03_04	30m	1.56m	10.42%	1.62m	10.97%	1.12m	1.27m	1.88m	1.35m	5.44m	79.69%
	100m	2.95m	12.15%	3.05m	12.70%	1.98m	2.67m	3.14m	2.78m	6.74m	76.06%
	200m	4.18m	10.13%	4.28m	10.56%	4.91m	4.23m	6.30m	4.44m	10.73m	74.61%
	10m	7.05m	87.16%	7.20m	88.34%	0.34m	0.55m	0.43m	0.65m	1.82m	93.59%
	20m	10.10m	99.82%	10.32m	101.69%	0.35m	0.83m	0.67m	1.01m	3.30m	88.19%
Town03_05	30m	10.02m	93.36%	10.19m	94.98%	0.72m	1.48m	1.40m	1.66m	3.87m	84.79%
	100m	11.15m	83.69%	11.36m	85.20%	1.73m	2.87m	3.06m	3.32m	4.94m	76.94%
	200m	12.16m	74.37%	12.37m	75.77%	2.16m	3.41m	3.65m	4.00m	5.99m	74.93%
	10m	0.22m	3.59%	0.22m	3.62%	0.57m	0.30m	0.70m	0.39m	0.34m	97.94%
	20m	0.53m	4.90%	0.57m	5.20%	0.72m	0.61m	1.38m	0.79m	1.62m	89.39%
Town03_06	30m	1.49m	8.00%	1.56m	8.36%	0.87m	1.04m	1.77m	1.22m	2.45m	83.98%
	100m	3.34m	10.69%	3.41m	10.97%	1.95m	3.39m	3.40m	3.57m	4.64m	76.50%
	200m	3.07m	8.51%	3.15m	8.74%	5.86m	4.67m	7.66m	4.92m	6.17m	75.07%
	10m	0.30m	4.61%	0.33m	5.10%	0.73m	0.47m	1.37m	0.56m	0.97m	94.43%
	20m	0.69m	6.37%	0.80m	7.29%	1.27m	0.73m	2.69m	0.95m	2.47m	86.80%
Town03_07	30m	1.42m	8.72%	1.57m	9.77%	1.94m	1.18m	3.87m	1.51m	3.84m	77.83%
	100m	3.14m	10.72%	3.49m	11.91%	3.57m	3.51m	6.50m	4.56m	5.40m	68.94%
	200m	3.07m	8.42%	3.46m	9.39%	5.38m	4.37m	8.57m	5.60m	6.86m	68.81%
	10m	0.85m	12.67%	1.15m	16.72%	0.06m	0.57m	0.07m	0.55m	1.95m	74.38%
	20m	1.19m	13.53%	1.50m	17.21%	0.17m	0.66m	0.33m	0.67m	2.11m	74.90%
Town03_08	30m	1.32m	13.41%	1.61m	16.87%	0.52m	0.89m	0.85m	0.95m	2.38m	75.08%
	100m	1.86m	13.22%	2.16m	16.35%	1.57m	2.15m	2.32m	2.31m	3.05m	73.89%
	200m	2.07m	9.82%	2.32m	12.05%	6.36m	3.56m	7.22m	3.73m	3.89m	72.38%
	10m	3.27m	60.78%	3.46m	64.64%	0.17m	1.30m	0.56m	1.54m	1.82m	86.29%
	20m	3.07m	45.57%	3.20m	48.14%	0.16m	1.22m	0.56m	1.38m	1.57m	83.64%
Town03_09	30m	3.18m	42.72%	3.29m	45.01%	0.27m	1.52m	0.71m	1.68m	1.63m	83.39%
	100m	3.50m	40.82%	3.62m	42.98%	0.38m	1.93m	0.85m	2.09m	2.00m	82.62%
	200m	3.23m	35.29%	3.32m	37.20%	0.53m	1.96m	0.93m	2.12m	2.44m	82.49%
	10m	2.50m	30.96%	2.60m	32.49%	0.65m	0.66m	0.85m	0.77m	1.16m	91.32%
	20m	2.71m	27.29%	2.80m	28.47%	0.49m	0.68m	0.73m	0.77m	1.41m	91.30%
Town03_10	30m	3.63m	29.05%	3.73m	30.17%	0.60m	1.00m	1.02m	1.11m	2.02m	89.91%
	100m	7.85m	33.13%	7.99m	34.18%	1.44m	2.67m	2.51m	2.92m	3.87m	84.03%
	200m	7.38m	26.17%	7.52m	27.03%	4.53m	3.43m	5.85m	3.96m	5.33m	81.81%
	10m	0.43m	6.06%	0.47m	6.62%	0.67m	0.43m	0.89m	0.45m	0.99m	98.51%
	20m	2.24m	15.59%	2.38m	16.64%	0.98m	0.66m	1.51m	0.68m	3.07m	89.26%
Town03_11	30m	4.19m	22.65%	4.38m	23.84%	1.30m	0.94m	1.96m	1.00m	3.90m	81.62%
	100m	4.81m	21.35%	5.04m	22.46%	2.43m	2.64m	3.63m	2.82m	4.49m	76.78%
	200m	3.86m	15.19%	4.03m	15.98%	5.02m	3.41m	6.61m	3.75m	5.43m	75.71%
	10m	0.29m	4.44%	0.32m	4.92%	0.61m	0.26m	0.67m	0.30m	0.65m	98.45%
	20m	0.60m	5.64%	0.69m	6.40%	0.65m	0.53m	1.00m	0.65m	1.67m	89.75%
Town03_12	30m	1.00m	6.72%	1.07m	7.40%	1.14m	0.85m	1.91m	1.03m	2.50m	85.92%
	100m	2.02m	7.93%	2.14m	8.58%	2.75m	2.55m	4.05m	2.81m	3.42m	79.38%
	200m	1.97m	5.65%	2.10m	6.12%	4.65m	3.40m	6.22m	3.78m	4.48m	78.09%
	10m	0.30m	4.86%	0.36m	5.71%	0.56m	0.35m	0.82m	0.51m	0.86m	95.75%
	20m	1.68m	12.08%	1.87m	13.72%	0.61m	0.56m	1.21m	0.77m	3.00m	80.59%
Town03_13	30m	2.54m	14.42%	2.71m	15.75%	0.75m	0.95m	1.49m	1.13m	3.67m	76.82%
	100m	3.43m	15.21%	3.58m	16.36%	1.58m	2.44m	2.50m	2.61m	4.41m	74.22%
	200m	4.02m	14.06%	4.14m	15.08%	3.05m	2.94m	4.05m	3.13m	6.02m	73.78%
	10m	0.65m	12.46%	0.64m	11.99%	0.80m	0.57m	1.06m	0.62m	0.87m	98.33%
	20m	1.76m	17.26%	1.75m	16.98%	1.24m	1.16m	2.00m	1.27m	4.09m	88.79%
Town03_14	30m	2.25m	17.83%	2.27m	17.70%	1.61m	1.73m	2.62m	1.94m	5.83m	82.77%
	100m	3.89m	18.38%	4.00m	18.47%	2.85m	3.90m	4.68m	4.33m	8.77m	76.20%
	200m	5.40m	14.13%	5.62m	14.26%	8.66m	6.74m	10.78m	7.58m	14.13m	74.72%
	10m	0.79m	18.94%	0.80m	18.87%	0.52m	0.52m	0.86m	0.60m	0.74m	97.04%
	20m	1.94m	22.27%	2.13m	23.34%	0.92m	0.77m	2.06m	0.93m	2.90m	90.03%
Town03_15	30m	2.32m	22.17%	2.55m	23.36%	1.26m	1.04m	2.69m	1.28m	3.62m	85.86%
	100m	3.83m	19.45%	4.19m	20.63%	2.37m	2.90m	4.88m	3.66m	6.04m	75.59%
	200m	3.77m	15.36%	4.17m	16.35%	5.29m	3.77m	8.18m	4.96m	8.06m	74.93%
	10m	0.42m	6.33%	0.50m	7.64%	0.86m	0.68m	1.46m	0.92m	1.81m	91.42%
	20m	1.02m	9.35%	1.13m	10.61%	1.06m	0.92m	1.90m	1.12m	4.97m	80.90%
Town03_16	30m	1.45m	10.35%	1.54m	11.43%	1.50m	1.20m	2.43m	1.39m	6.10m	78.03%
	100m	2.41m	10.50%	2.51m	11.34%	2.28m	2.73m	3.49m	2.93m	6.62m	75.20%
	200m	3.02m	8.29%	3.11m	8.91%	4.76m	3.72m	6.01m	3.95m	9.95m	74.01%
	10m	0.34m	6.59%	0.37m	7.17%	0.45m	0.46m	0.72m	0.48m	0.33m	98.56%
	20m	0.51m	6.38%	0.55m	6.91%	0.96m	0.92m	1.95m	1.10m	2.65m	89.09%
Town03_17	30m	0.97m	7.36%	1.03m	7.89%	0.98m	1.16m	2.13m	1.36m	3.13m	83.00%
	100m	1.65m	7.86%	1.72m	8.32%	1.61m	2.44m	3.13m	2.67m	3.48m	79.44%
	200m	2.14m	6.02%	2.21m	6.34%	6.77m	3.89m	8.50m	4.20m	4.68m	77.12%
	10m	0.38m	5.52%	0.48m	6.80%	0.37m	0.42m	0.45m	0.48m	1.15m	92.67%
	20m	0.76m	7.12%	0.86m	8.19%	0.49m	0.86m	0.84m	0.94m	1.88m	85.87%
Town03_18	30m	1.02m	7.57%	1.13m	8.56%	0.86m	1.22m	1.47m	1.35m	2.12m	82.31%
	100m	4.09m	12.24%	4.16m	12.93%	1.68m	2.39m	3.10m	2.75m	4.08m	73.94%
	200m	4.49m	10.76%	4.69m	11.40%	4.01m	3.34m	5.60m	4.19m	5.34m	73.31%
	10m	13.25m	180.69%	13.33m	181.88%	0.28m	1.24m	0.49m	1.44m	2.87m	89.69%
	20m	12.80m	150.50%	12.77m	150.61%	0.35m	1.26m	0.70m	1.39m	2.82m	85.70%
Town03_19	30m	11.72m	133.06%	11.68m	133.11%	0.51m	1.73m	0.89m	1.83m	2.68m	84.81%
	100m	11.19m	120.74%	11.17m	120.93%	0.73m	2.32m	1.36m	2.45m	2.74m	83.57%
	200m	9.94m	105.93%	9.94m	106.27%	0.82m	2.34m	1.40m	2.47m	3.23m	83.49%

4 Additional Dense Depths Results on our SLED Dataset

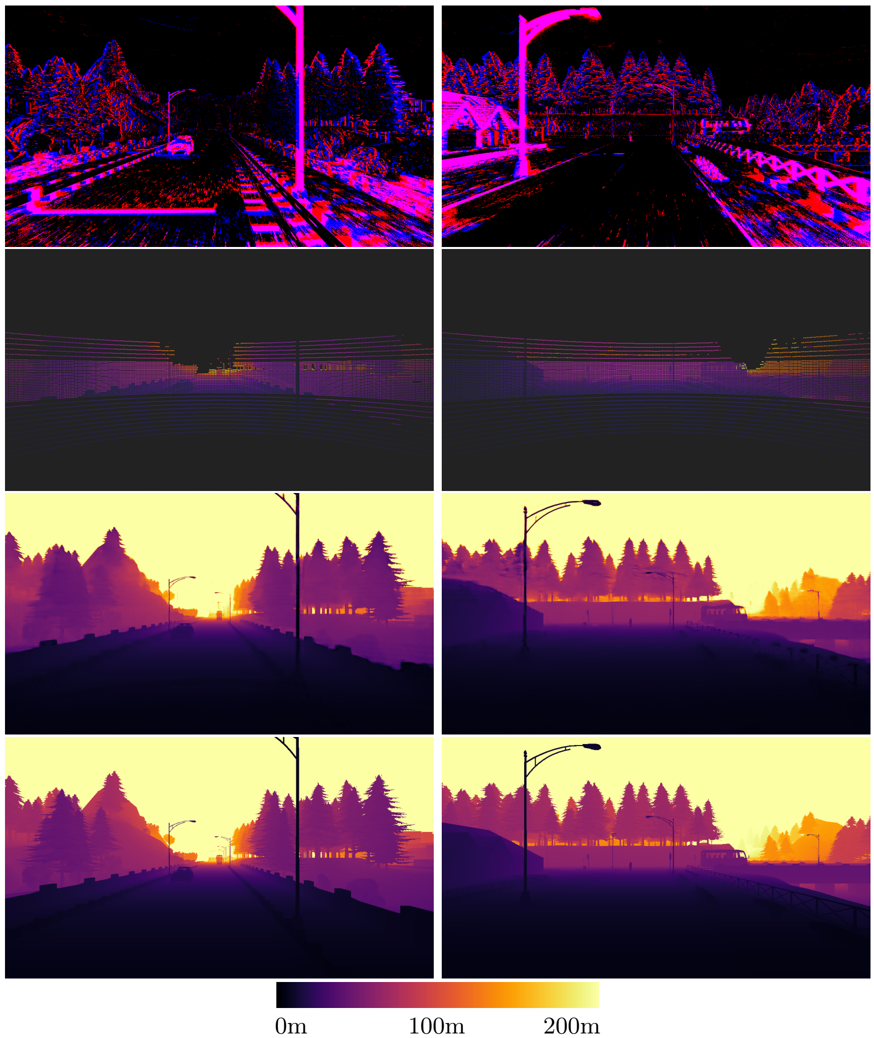


Fig. 4: Additional dense depths results on the SLED dataset.

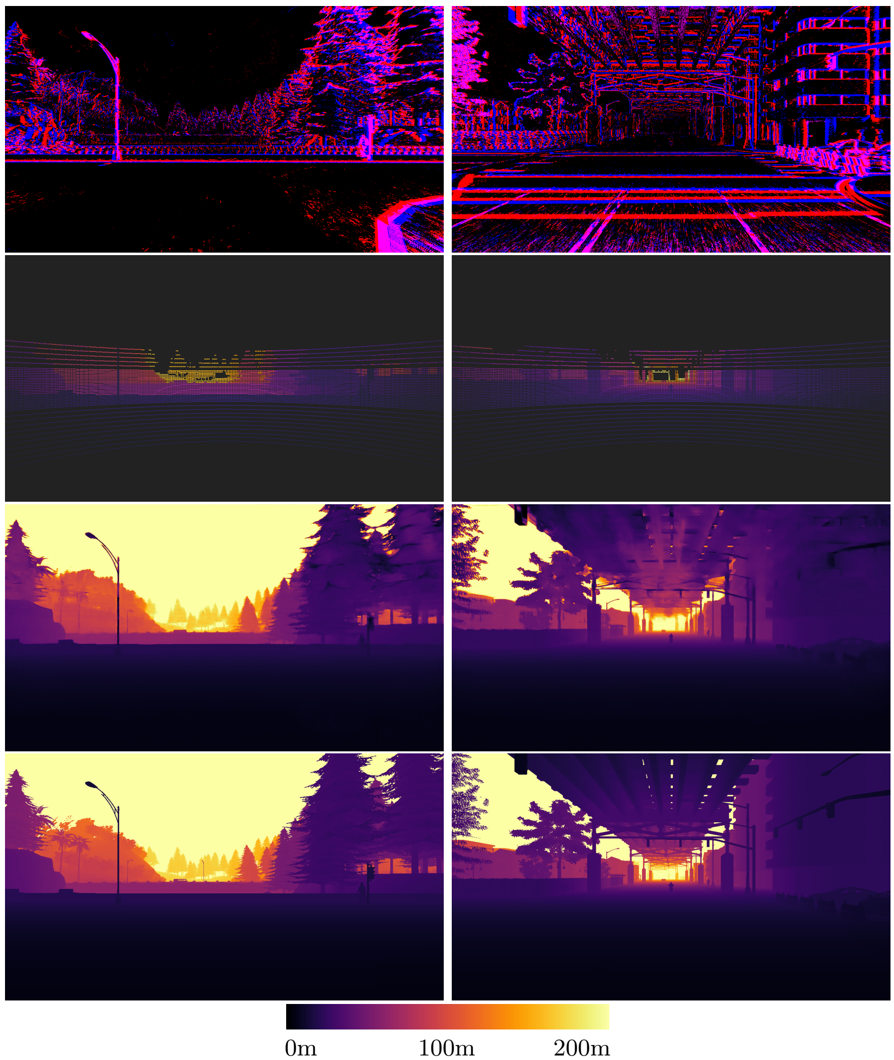


Fig. 5: Additional dense depths results on the SLED dataset.

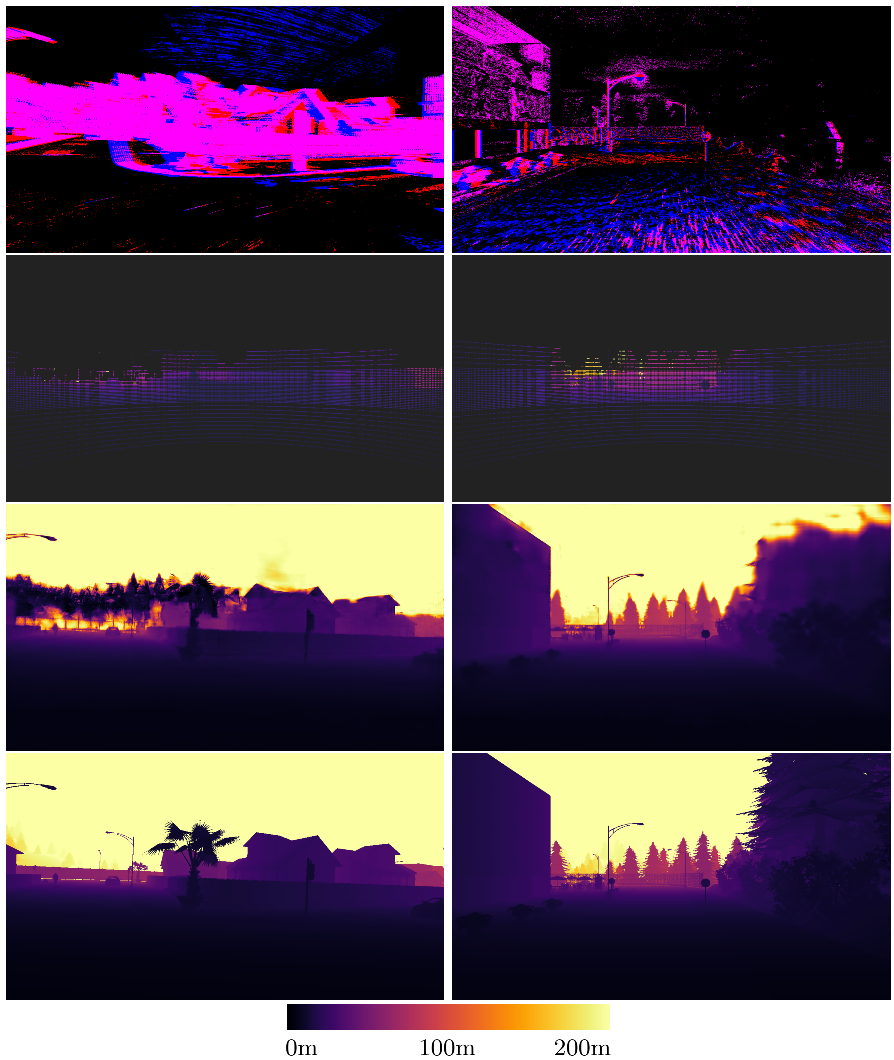


Fig. 6: Additional dense depths results on the SLED dataset. Illustrated here are two failure cases. Left: due to a sharp turn at high speed, accumulated events become too blurry, resulting in an incorrect prediction for distant objects. Right: night scene, where the trees on the right side are too dark to be seen even by the event camera, resulting in a partially blurry prediction.

5 Additional Dense Depths Results on the MVSEC Dataset

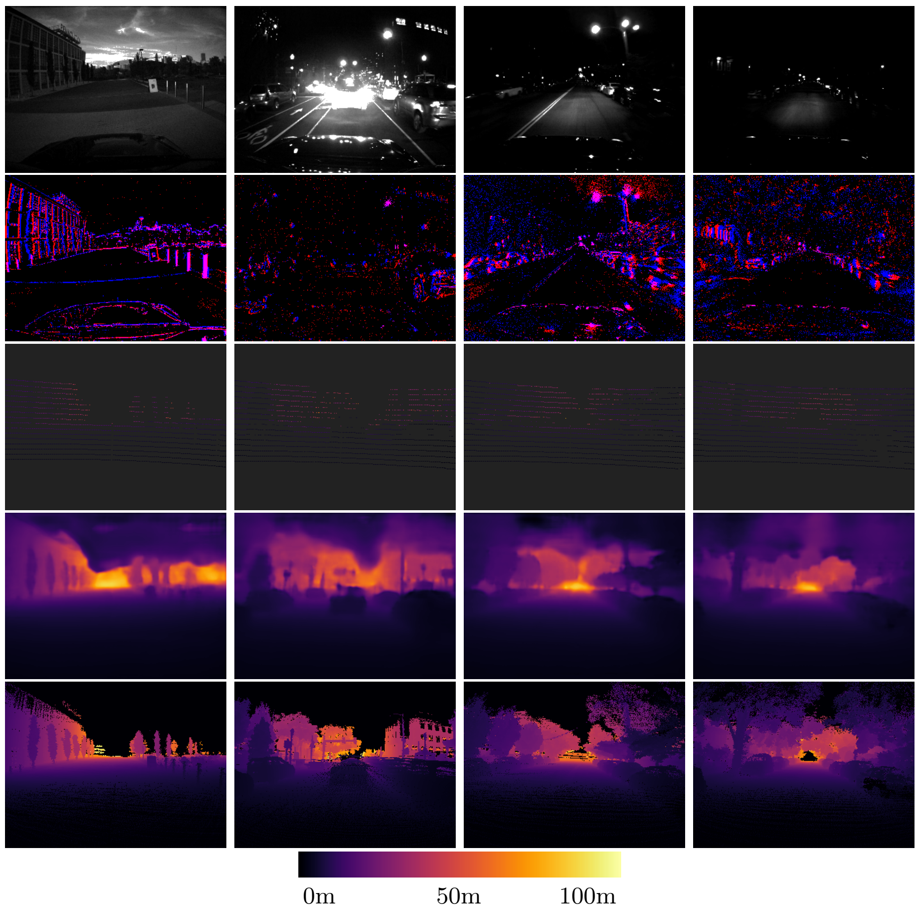
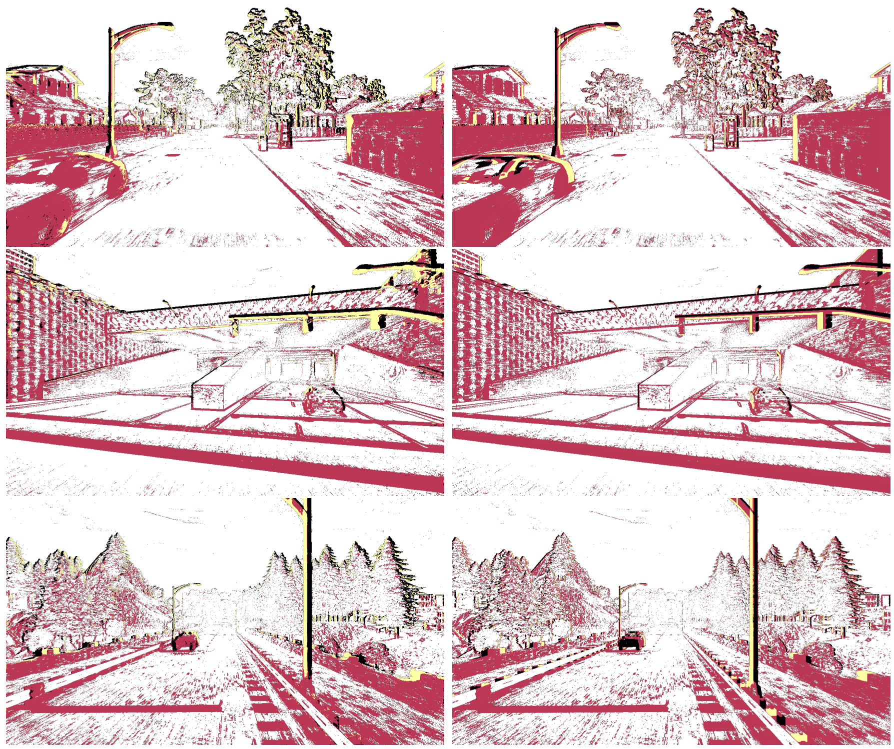


Fig. 7: Additional dense depths results on the MVSEC dataset. From left to right: "Outdoor day 1", "Outdoor night 1", "Outdoor night 2", "Outdoor night 3". From top to bottom: grayscale reference, events, LiDAR, prediction ($\text{ALED}_{\text{S}\rightarrow\text{R}}$), ground truth, color scale.

6 Thresholded Depth Change Maps Illustrations on our SLED Dataset

We present in Fig. 8 and 9 qualitative results for the thresholded depth change maps. These results visually corroborate the numerical analysis presented in the main article, i.e., the overall accurate classification of the events. Some errors can still be seen, especially for the lower parts of the objects: as they are closer to the ground, the depth difference is less significant, and errors on the depth change map become therefore more critical.

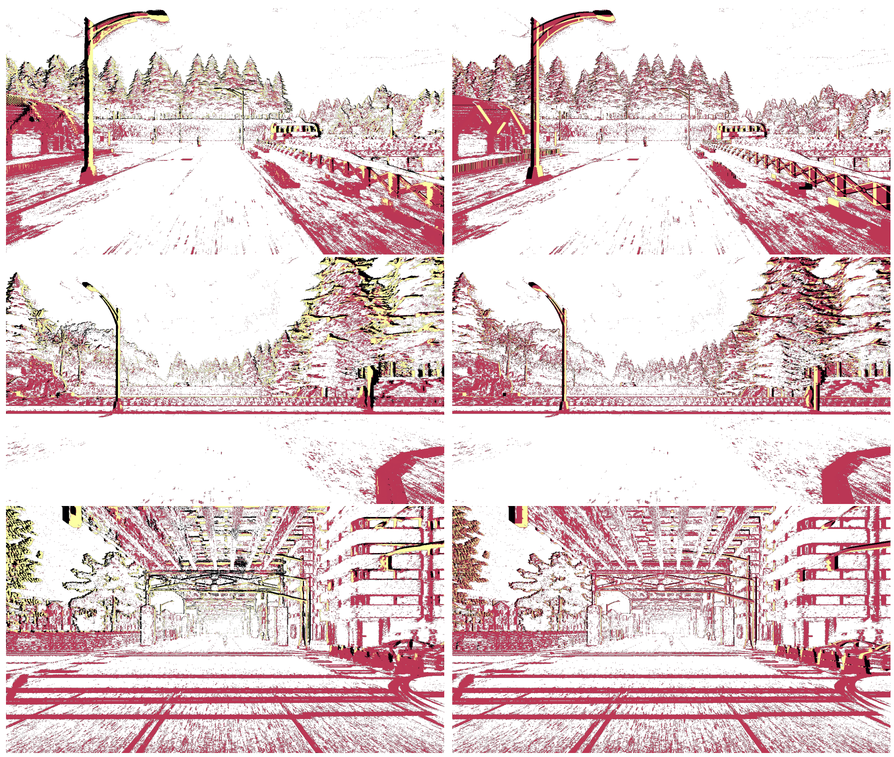


$d_{\mathrm{af}} - d_{\mathrm{bf}} < -1\mathrm{m}$

$d_{\mathrm{af}} - d_{\mathrm{bf}} \in [-1\mathrm{m}, 1\mathrm{m}]$

$d_{\mathrm{af}} - d_{\mathrm{bf}} > 1\mathrm{m}$

Fig. 8: Thresholded depth change map results, using the events as a mask. Left: prediction ($\mathrm{ALED_S}$). Right: ground truth.



■ $d_{\mathrm{af}} - d_{\mathrm{bf}} < -1\mathrm{m}$

■ $d_{\mathrm{af}} - d_{\mathrm{bf}} \in [-1\mathrm{m}, 1\mathrm{m}]$

■ $d_{\mathrm{af}} - d_{\mathrm{bf}} > 1\mathrm{m}$

Fig. 9: Additional thresholded depth change map results, using the events as a mask. Left: prediction ($\mathrm{ALED_S}$). Right: ground truth.