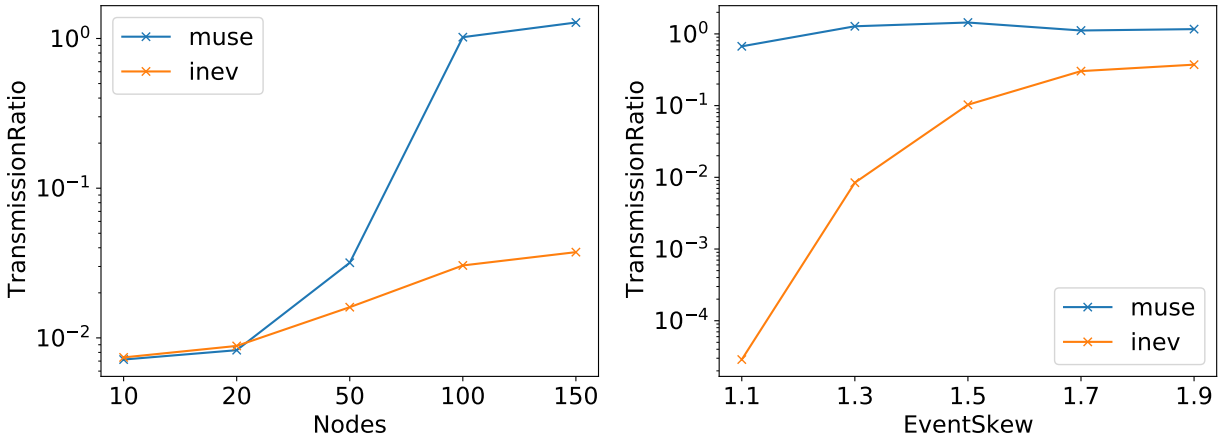
Material in Response to Comments on: "INEv: In-Network Evaluation for Event Stream Processing"

September 7, 2022

1 Comparison against MuSE graphs

1.1 Experiments on synthetic data



(a) (b)

For the experiment with varying network size (nodes on x-axis), we generated a network with an event skew of 1.5.

1.2 Experiments on real-world data

For the comparison, we used a partitioning with 20 nodes, as presented in the draft.

The experiments for the evaluation of a MuSE graph for $Q4$ of the Citi Bike and for $Q1$ of the Cluster Monitoring did not terminate due to overload caused by the high number of events that needed to be sent over the network and processed by the nodes. The table entries for those two experiments correspond to the transmission ratios that were observed before terminating the experiments.

Table 1: Transmission ratios of MuSE and INEv graphs for Citi Bike data set.

	Q1	Q2	Q3	Q4	
INEv	0.001 %	0.009 %	0.008%	0.01%	Transm. Ratio
MuSE	0.03%	150 %	120 %	$>$ 131 %	

Table 2: Transmission ratios of MuSE and INEv graphs for Cluster Monitoring.

	Q1	Q2	Q3	Q4	
INEv	0.006 %	0.008 %	0.001%	0.008%	Transm. Ratio
MuSE	> 45 %	0.11 %	0.001 %	0.008 %	

2 Results for different partitionings of the data set

Table 3: Transmission ratios for a partitioning with 10 nodes.

	Q1	Q2	Q3	Q4	
Citi Bike	0.001 %	0.009 %	0.008%	0.01%	Transm. Ratio
Cluster Monitoring	0.001%	0.002 %	0.001%	0.003%	

Table 4: Transmission ratios for a partitioning with 30 nodes.

	Q1	Q2	Q3	Q4	
Citi Bike	0.001%	0.02%	0.006%	0.01%	Transm. Ratio
Cluster Monitoring	0.0007%	0.006%	0.0008%	0.0003%	