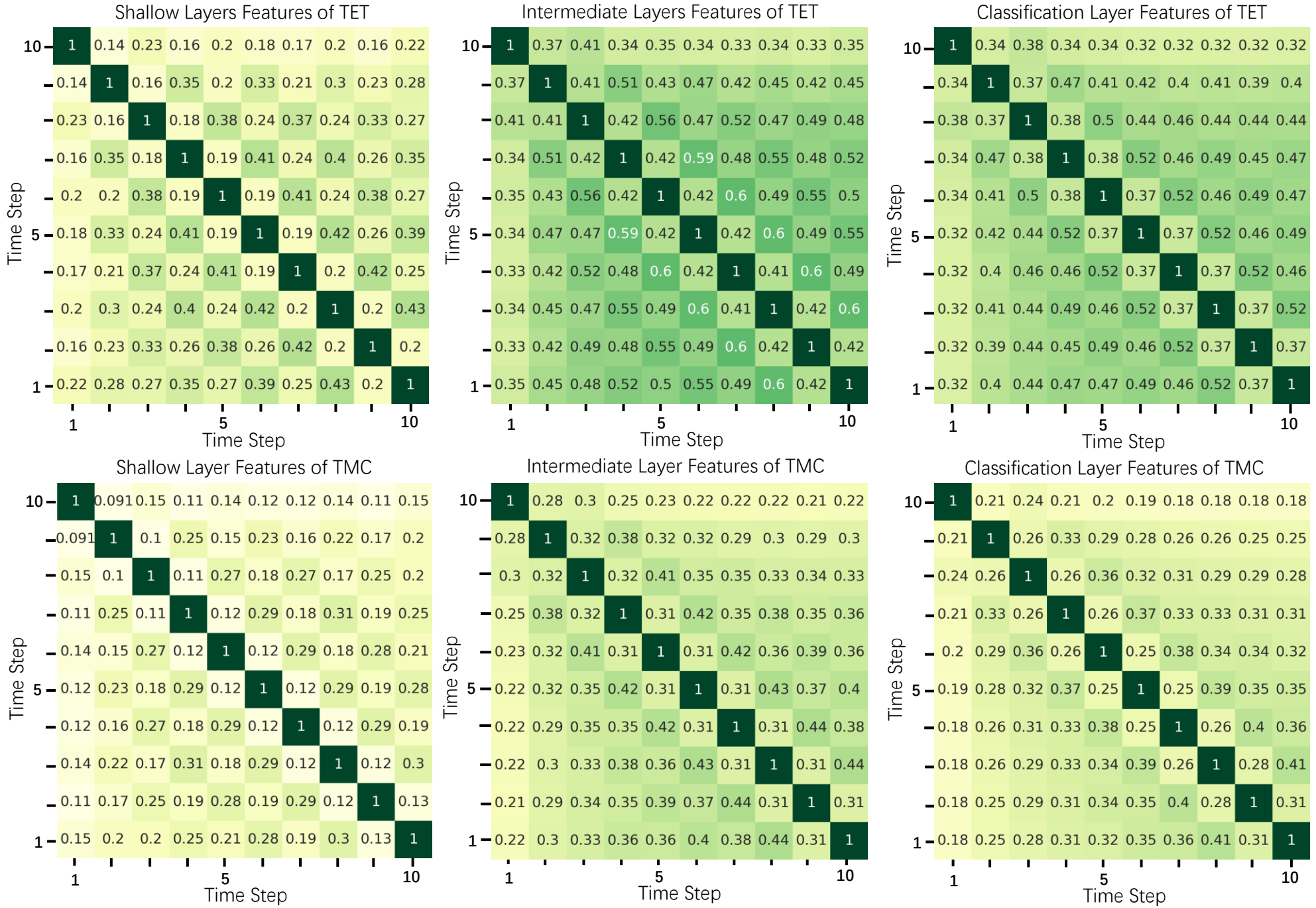

Figure R1. Temporal heterogeneity visualization.

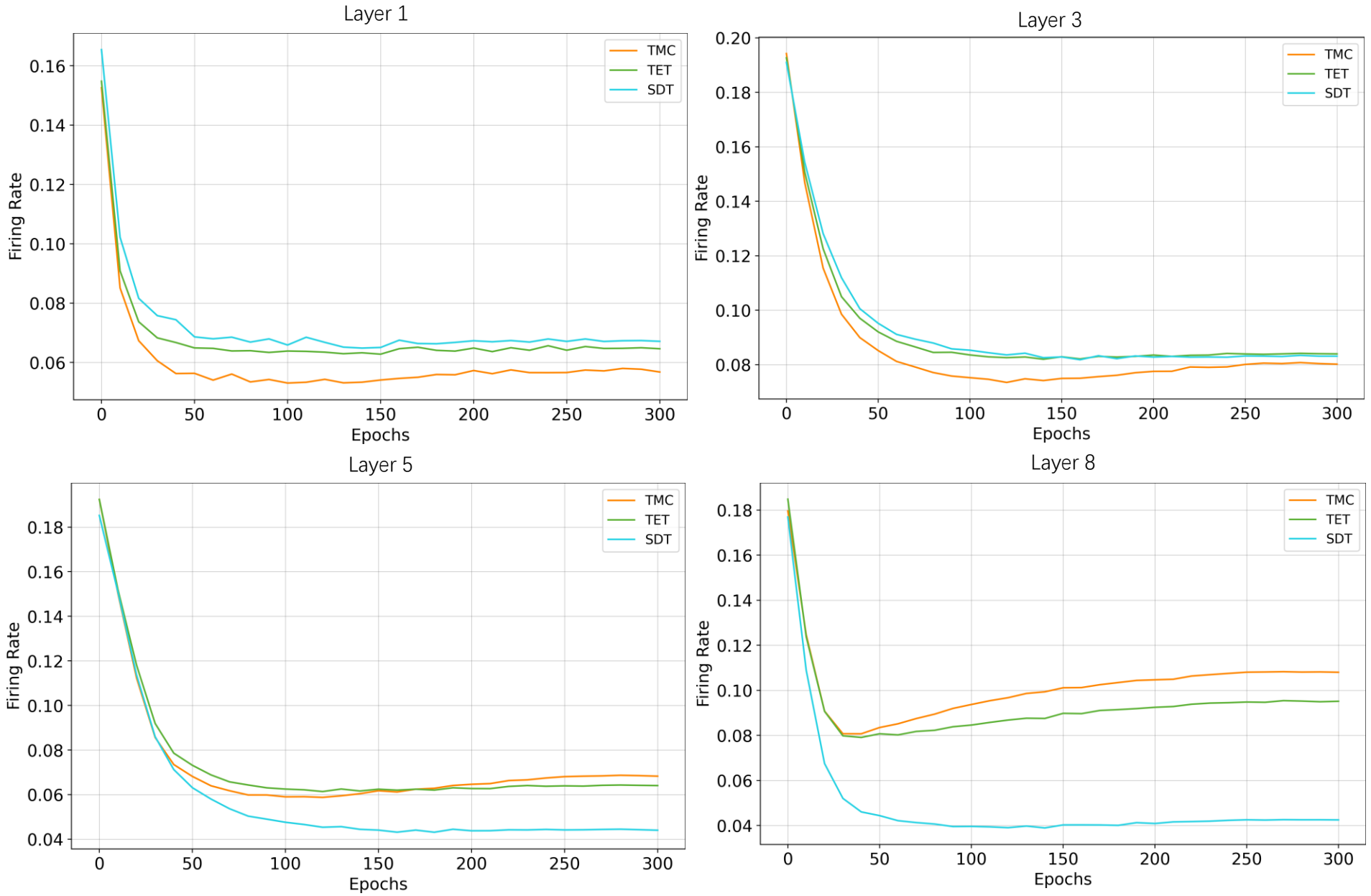

Figure R2. Spike firing rates comparison across layers during training.

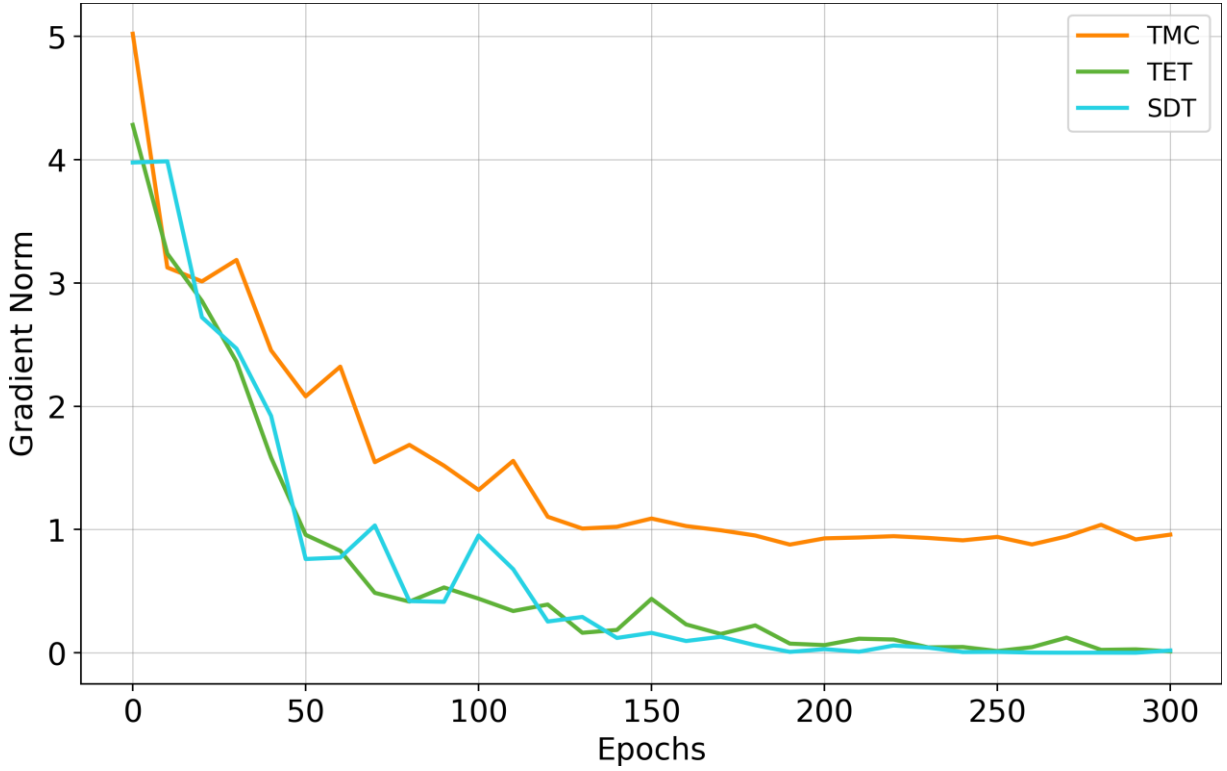

Figure R3. Gradient norm comparison during training.

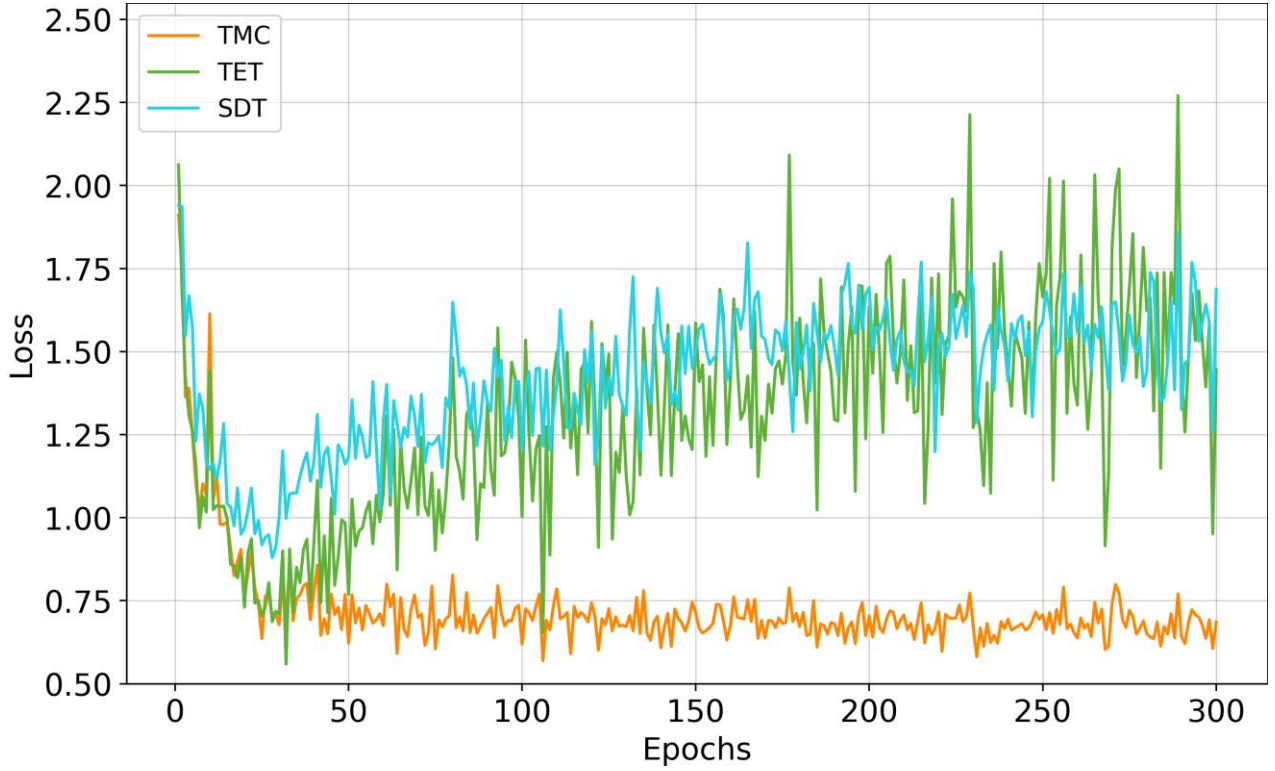

Figure R4. Training loss comparison during training.

Table R1. Performance comparison with state-of-the-art methods on DVS-Gesture.

Model	Architecture	Time Step	Accuracy
STBP-tdBN [R2]	ResNet-17	40	96.87
PLIF [R3]	5Conc, 2FC	20	97.57
SEW ResNet [R4]	7B-Net	16	97.92
TA-SNN [R5]	TA-SNN	20	98.61
TCJA [R6]	5Conc, 2FC	20	99.00
STSC [R7]	5Conc, 2FC	20	98.96
SLT-TET [R8]	VGGSNN	10	98.43
Spikeformer [R9]	Spikeformer-7/5 × 1 × 3	16	98.96
TMC	VGGSNN	10	**99.12%**

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