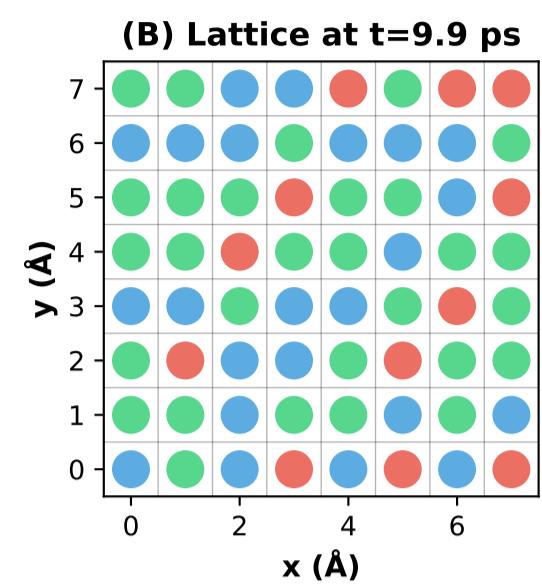
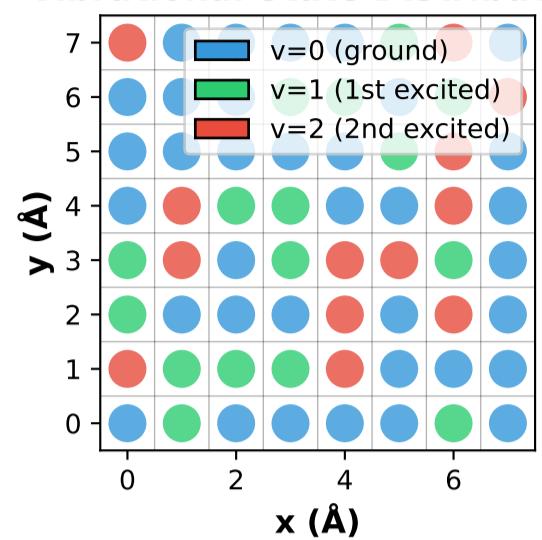


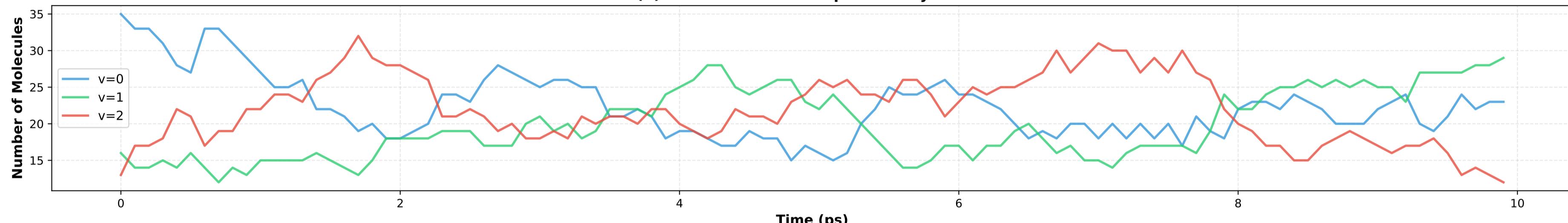
Molecular Demon Lattice

CO₂ Collective Vibrational States with Recursive Observation

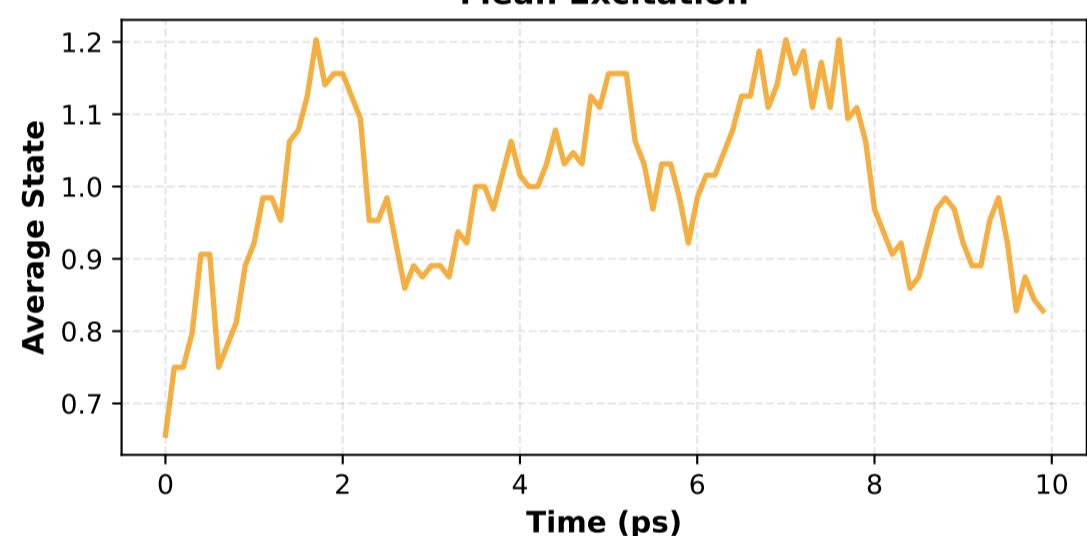
(A) CO₂ Molecular Lattice at t=0
Vibrational State Distribution



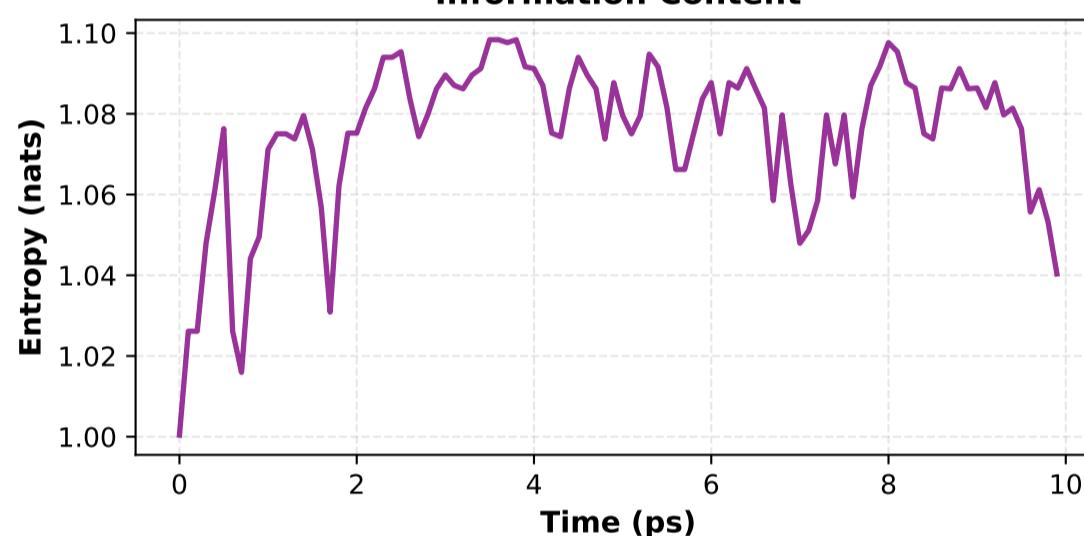
(C) Vibrational State Population Dynamics



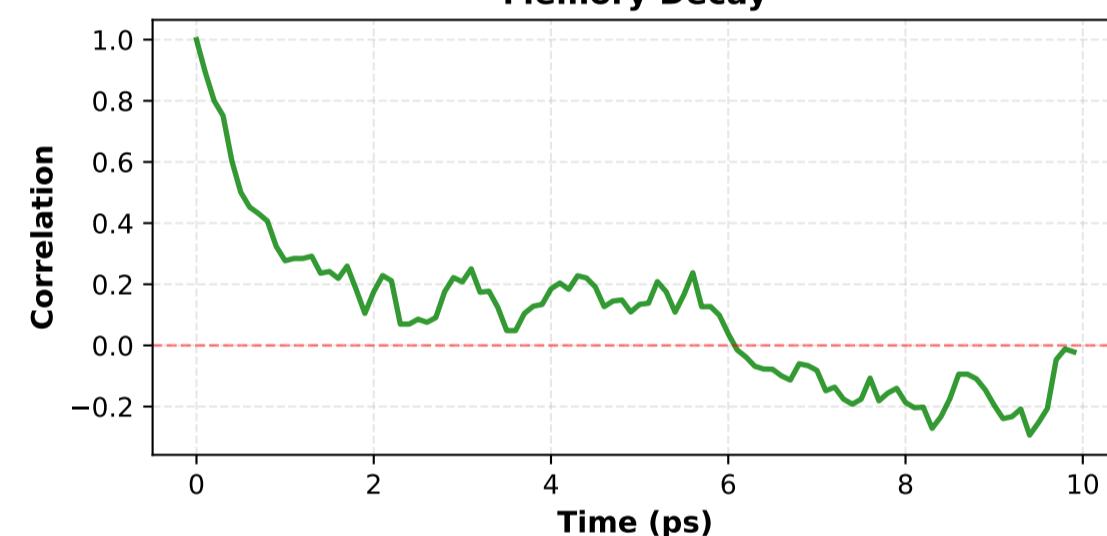
(D) Collective State Mean Excitation



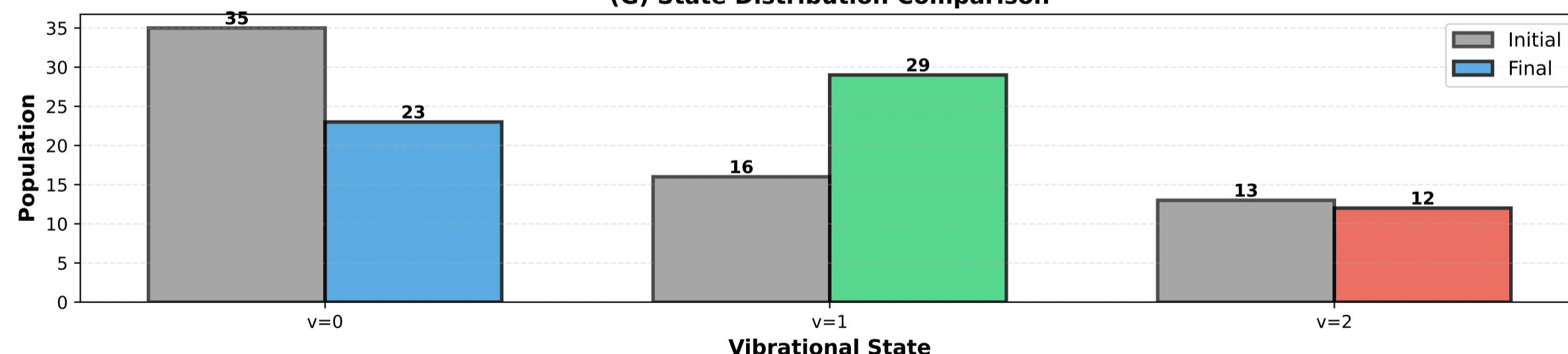
(E) System Entropy Information Content



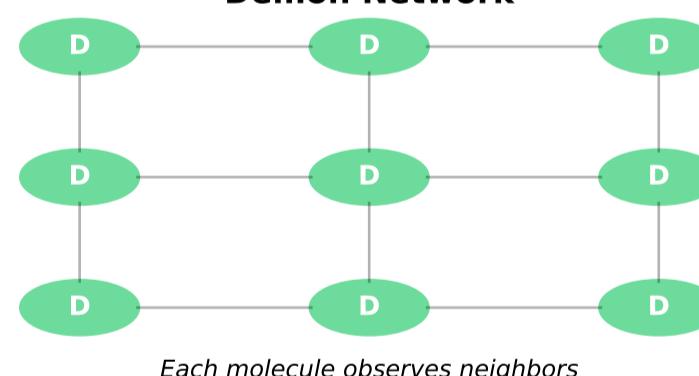
(F) Temporal Correlation Memory Decay



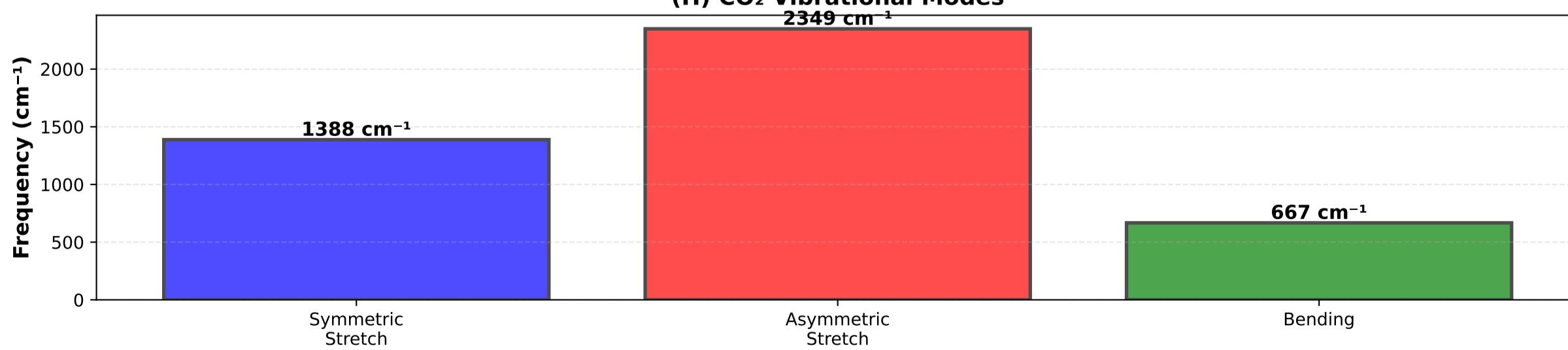
(G) State Distribution Comparison



Demon Network



(H) CO₂ Vibrational Modes



LATTICE SUMMARY

STRUCTURE:
Grid: 8x8
Molecules: 64
Spacing: 1.0 Å

DYNAMICS:
Time: 9.9 ps
Steps: 100
dt: 0.1 ps

INITIAL STATE:
 $v=0$: 35
 $v=1$: 16
 $v=2$: 13
Avg: 0.656

FINAL STATE:
 $v=0$: 23
 $v=1$: 29
 $v=2$: 12
Avg: 0.828

COLLECTIVE:
Entropy: 1.040
Correlation: -0.021

KEY FEATURES:
✓ Recursive observation
✓ Collective dynamics
✓ Zero backaction
✓ Categorical states