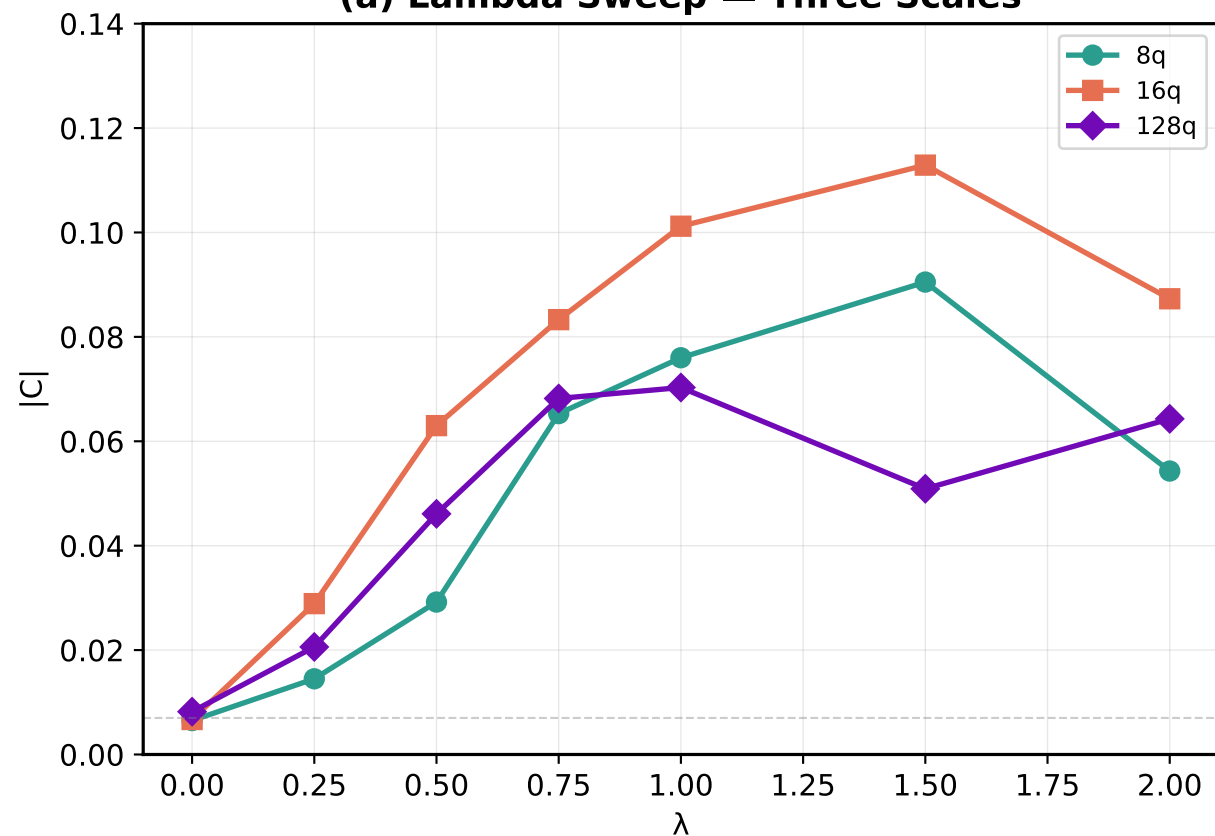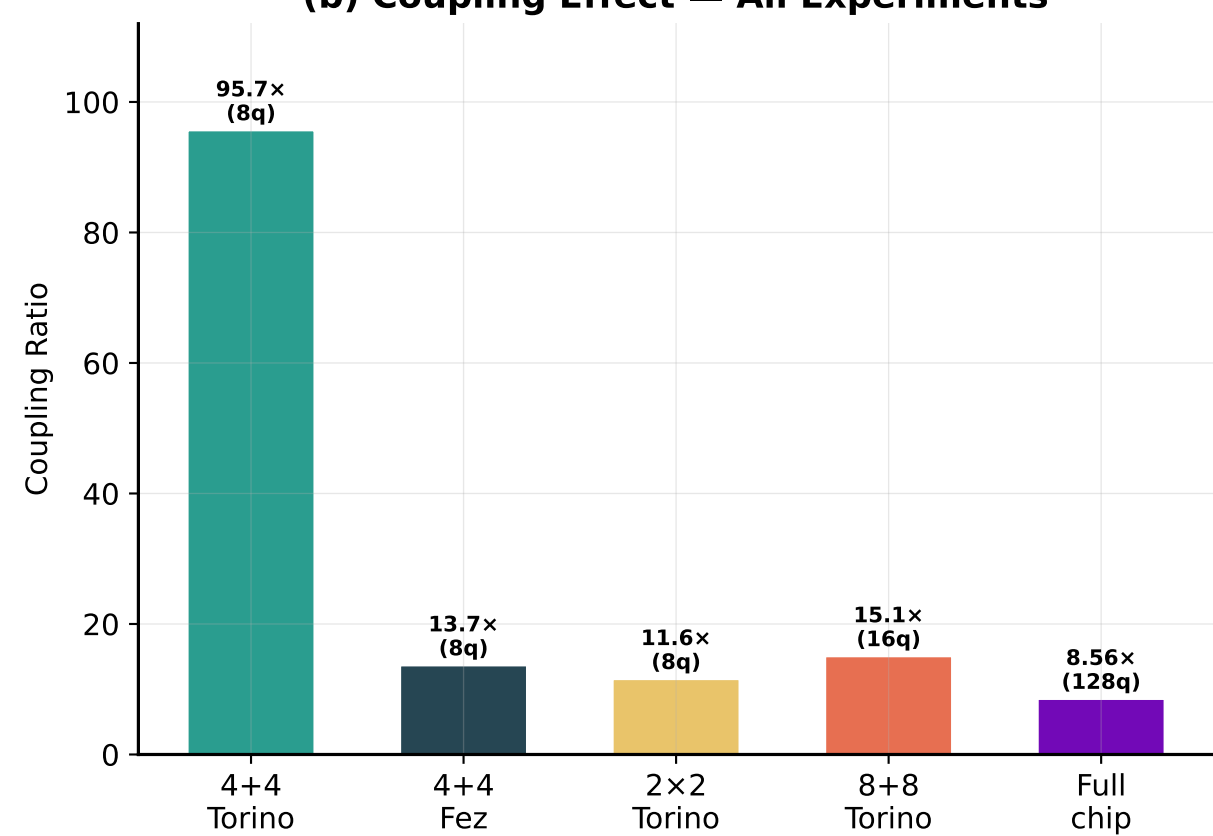# Emergent Spacetime: Full Hardware Validation (8 → 128 qubits)
Andrew Thurlow · 528 Labs · IBM Quantum (Torino & Fez)
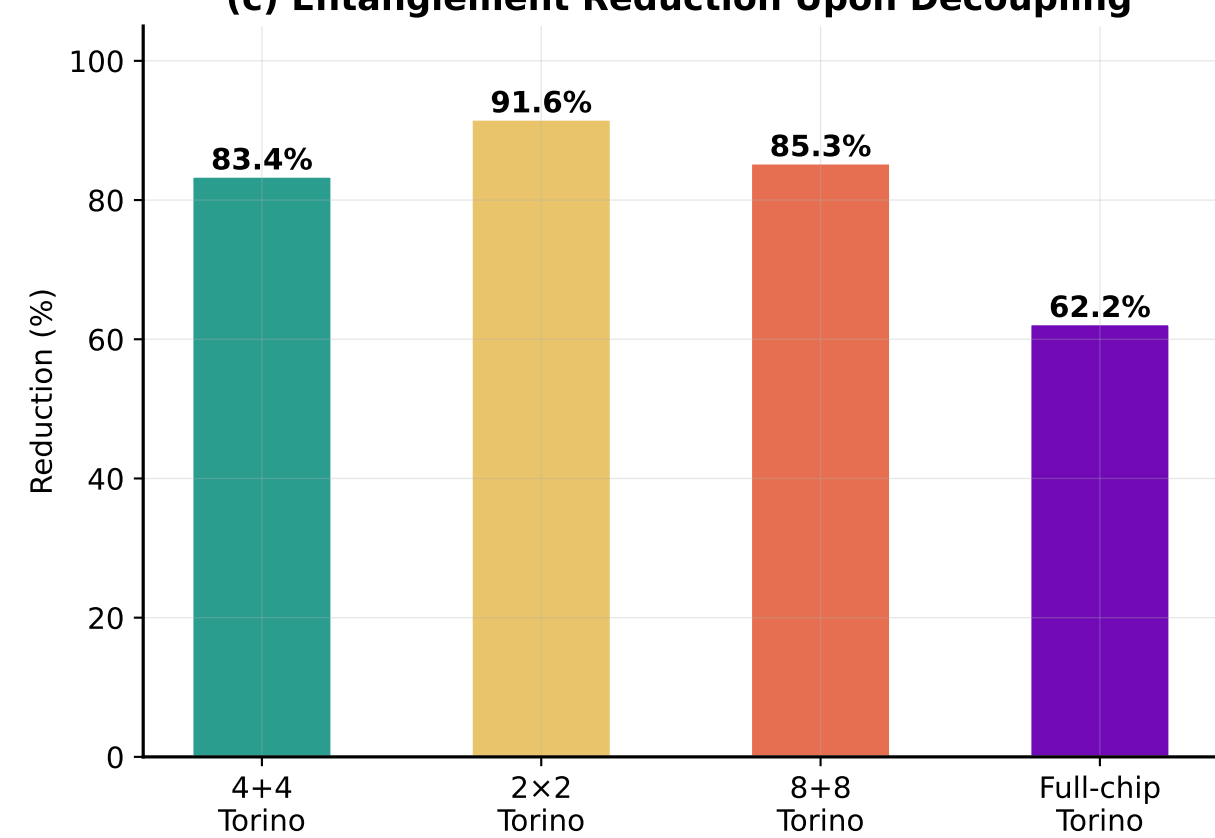

(a) Lambda Sweep — Three Scales

Legend: 8q, 16q, 128q

(b) Coupling Effect — All Experiments

- 4+4 Torino: 95.7× (8q)
- 4+4 Fez: 13.7× (8q)
- 2×2 Torino: 11.6× (8q)
- 8+8 Torino: 15.1× (16q)
- Full chip: 8.56× (128q)

(c) Entanglement Reduction Upon Decoupling

- 4+4 Torino: 83.4%
- 2×2 Torino: 91.6%
- 8+8 Torino: 85.3%
- Full-chip Torino: 62.2%

(d) Signal Consistency Across Chip ($\lambda=1.0$)

- R8 q64-71: 0.0963
- R9 q72-79: 0.0441
- R10 q80-87: 0.0670
- R15 q120-127: 0.0737