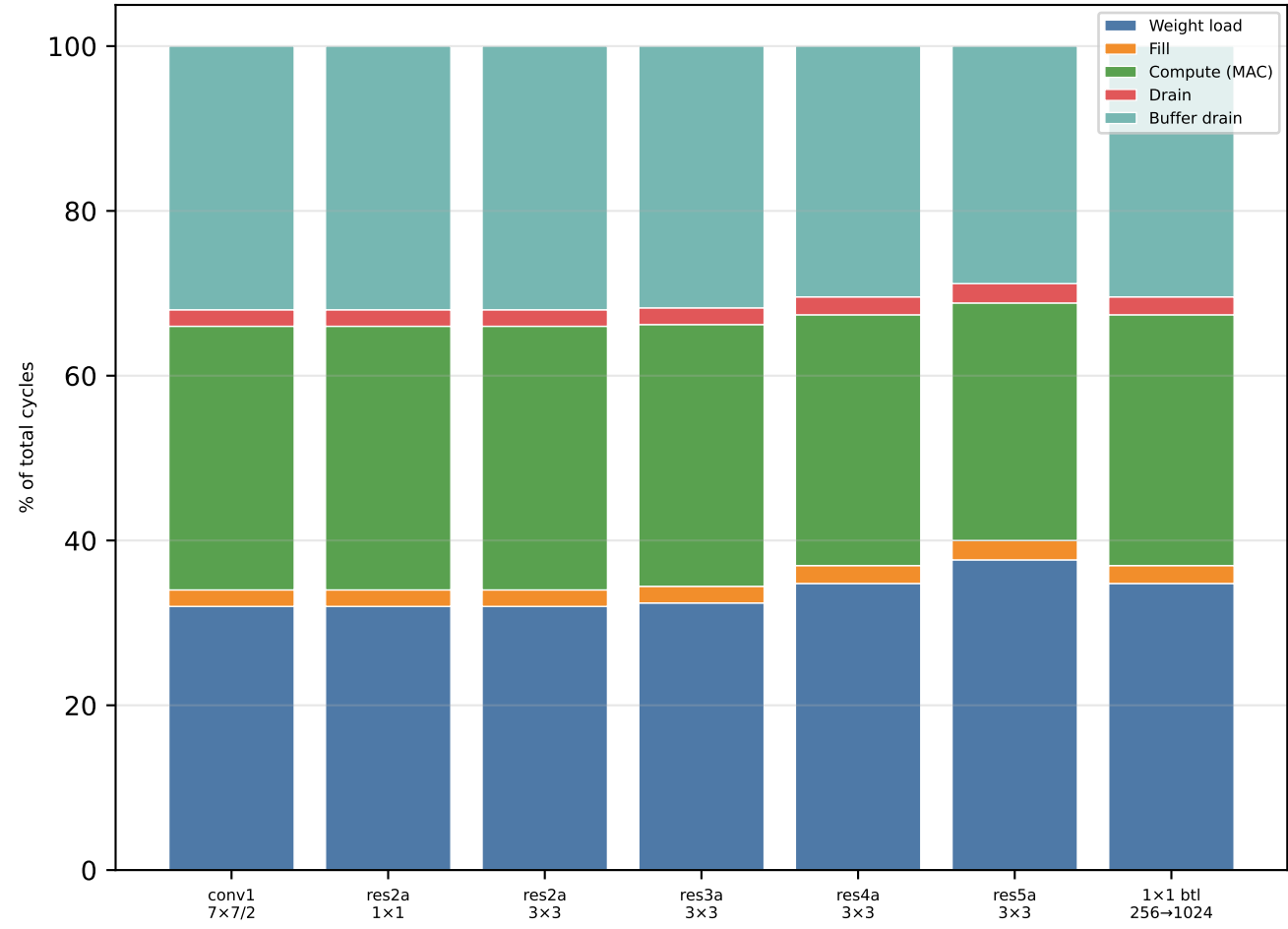
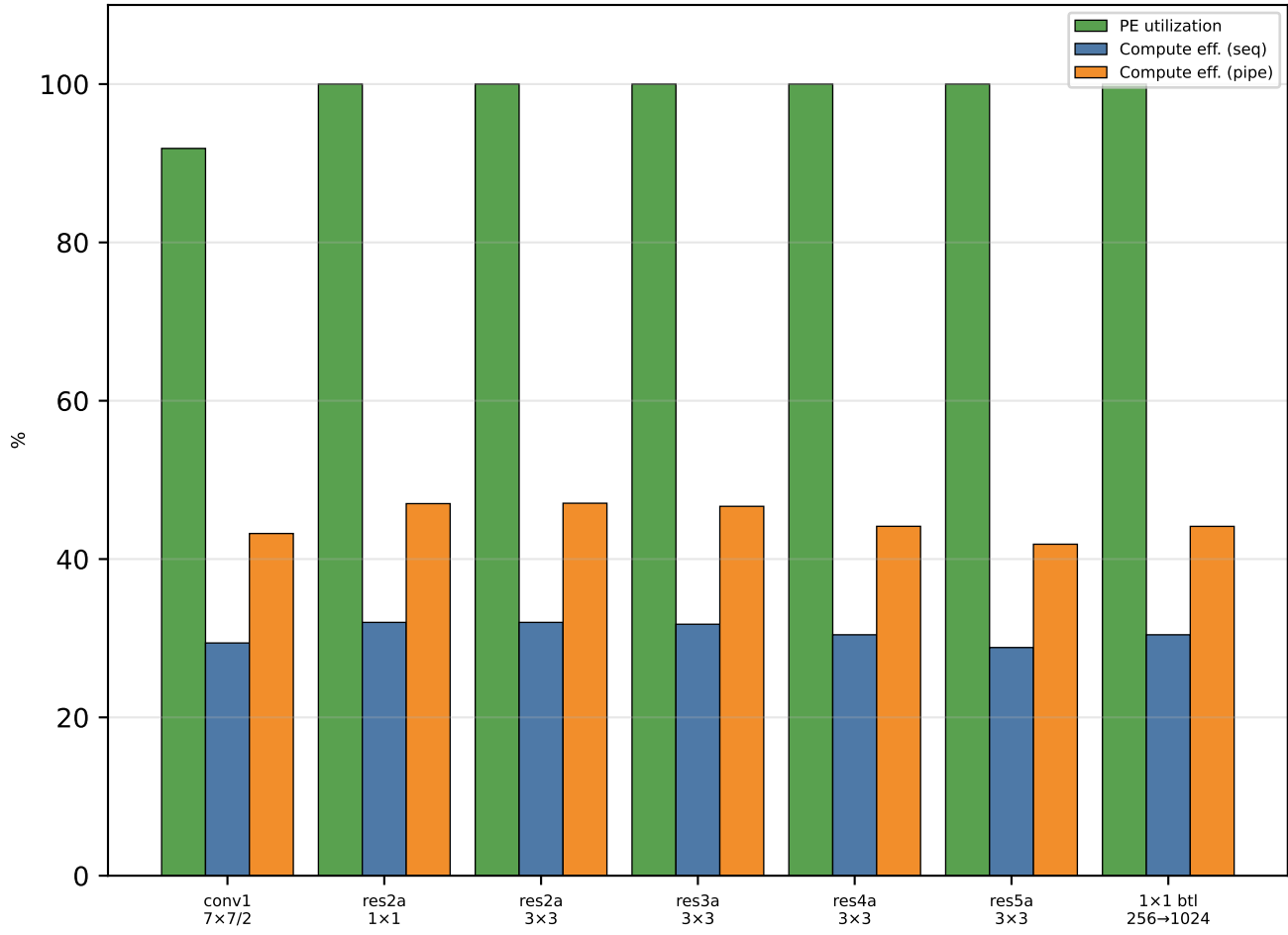


PSUM Buffer Routing & Timing — Atalla 32×32 Systolic Array
K-rows / C_out-cols mapping · Direct-mapped routing (col c → buf c, no crossbar)

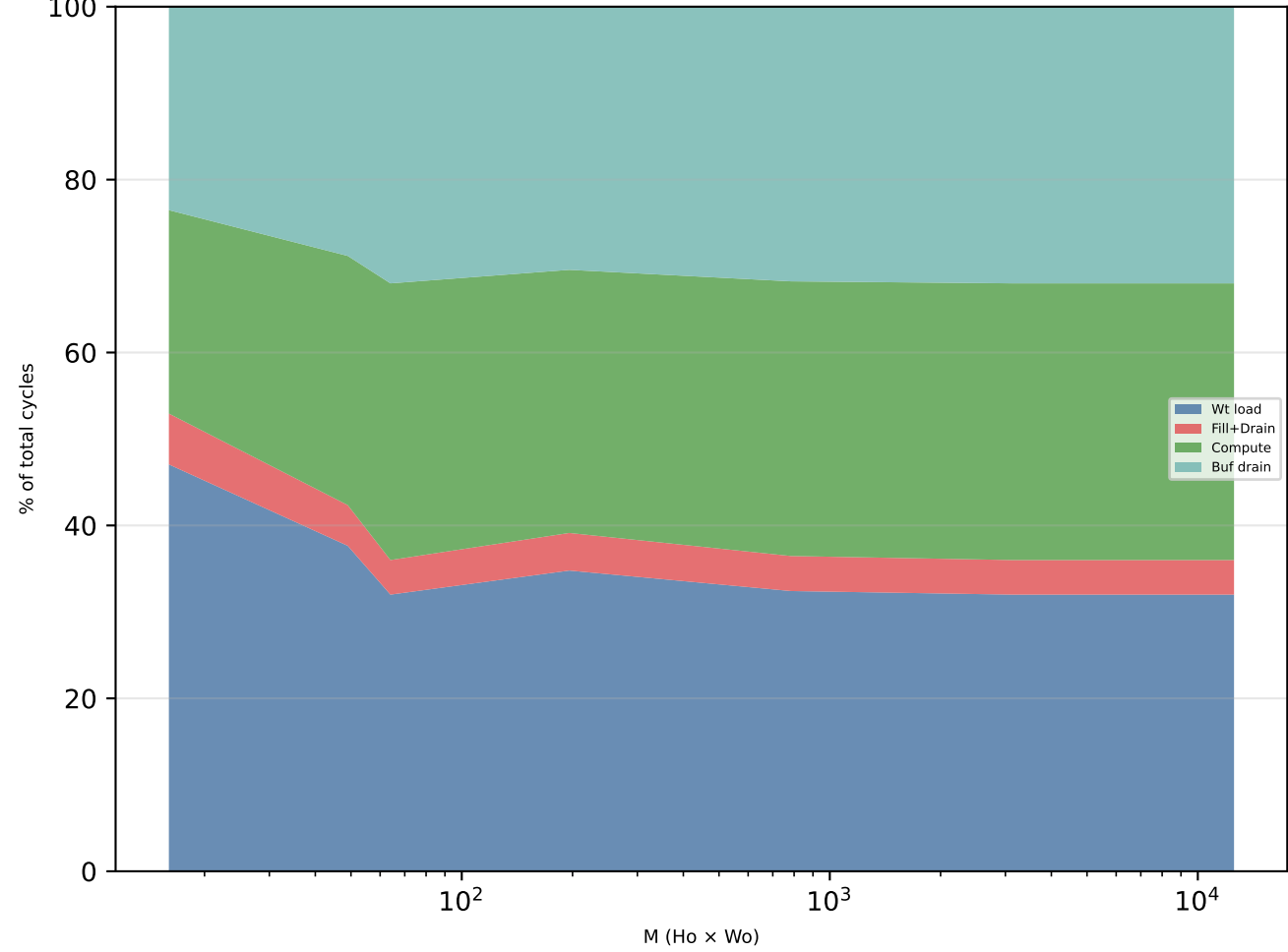
(a) Cycle Phase Breakdown — ResNet-50 (N=1, sequential)



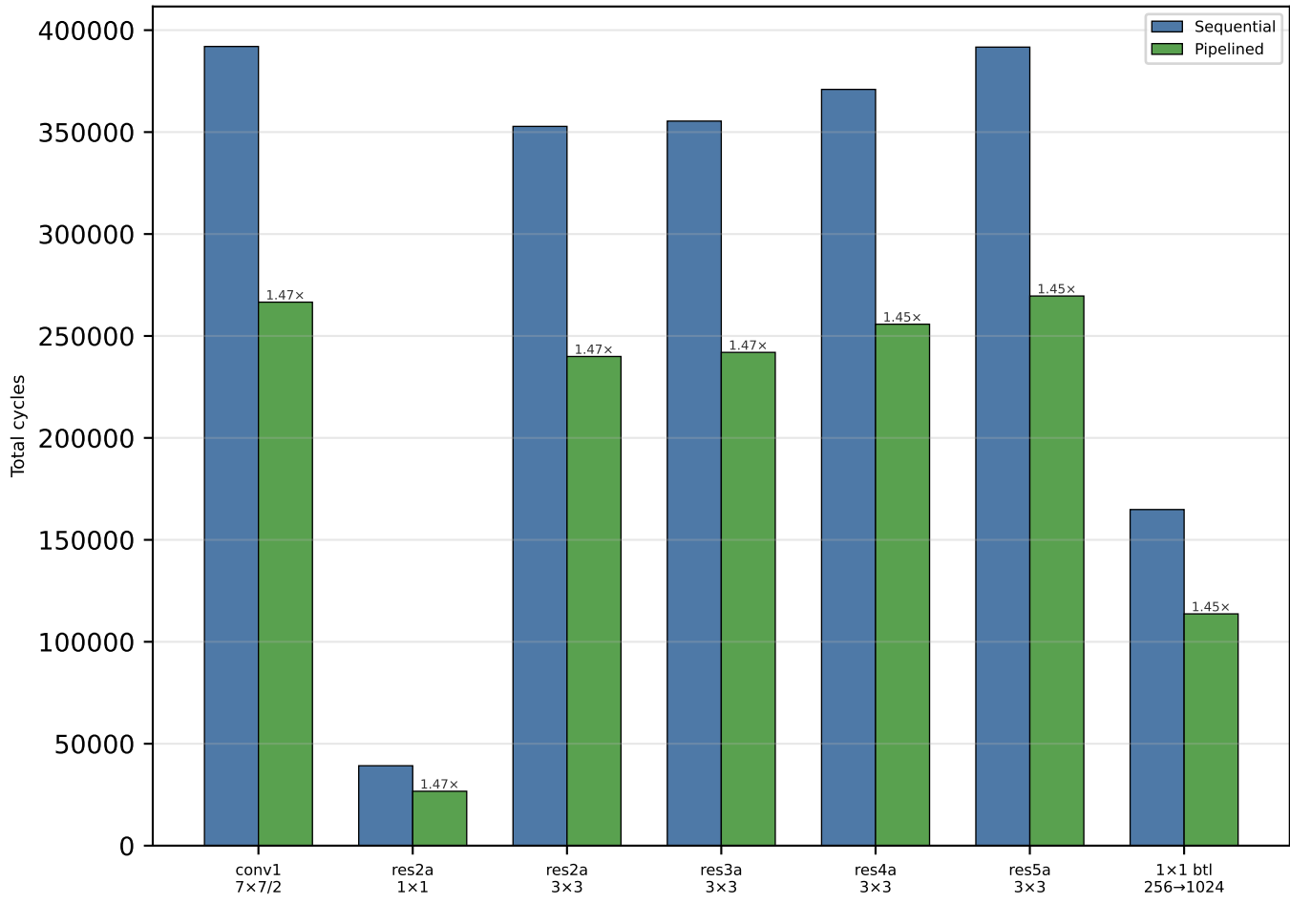
(b) PE Utilization vs Compute Efficiency



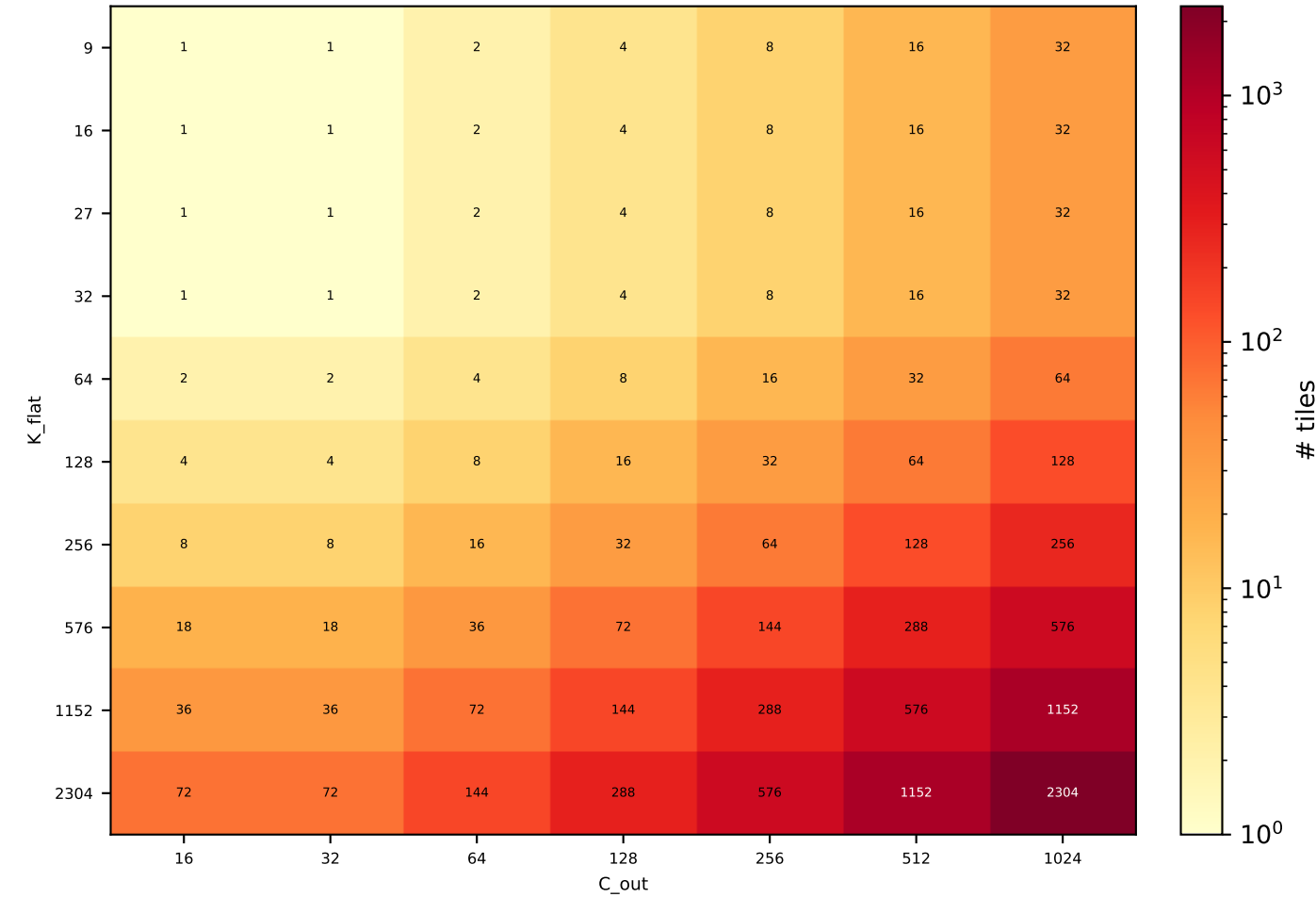
(c) Phase Share vs Spatial Size M
(Cin=64, Cout=64, 3×3)



(d) Sequential vs Pipelined — ResNet-50 (N=1)



(e) Weight Reloads (K_tiles × Cout_tiles)



(f) Efficiency vs Spatial Tile Size

