Cryptographic Lattice Benchmark Results Convergence Comparison (LLL-reduced lattice, σ =2.0) Mixing Time Scaling 10^{0} Quantum $\cdots O(n^2)$ --- O(n) Total Variation Distance 10^{2} classical n=2Mixing Time quantum n=2 classical n=4 10^{-1} quantum n=4 classical n=8 --- quantum n=8 10^{1} 10^{0} 10^{-2} 10^{1} 200 400 1000 600 800 Iteration Lattice Dimension Quantum Speedup vs Dimension Performance by Lattice Type **—** Empirical 140 Classical -- √n (theoretical) Quantum Convergence Rate (1000/mixing time)
00 08 00 001 15.0 Quantum Speedup Factor 2.5 4.5 5.5 6.01 5.0 20 2.5 15 5 10 20 25 30 identity 111 qary random Lattice Dimension Lattice Type