Comparison of Wolff and Swendsen-Wang Cluster Algorithms (a) Cluster Size Distribution at T=T_c (b) Number of Clusters vs Temperature WOLFF, L=8 WOLFF, L=48 WOLFF, L=48 WOLFF, L=8 SW, L=8 SW, L=48 SW, L=8 -- SW, L=48 WOLFF, L=16 WOLFF, L=64 WOLFF, L=16 ---- WOLFF, L=64 SW, L=16 -- SW, L=64 SW, L=16 -- SW. L=64 $\sim s^{-187/91}$ WOLFF, L=32 WOLFF, L=32 ••• Тс SW, L=32 -- SW, L=32 Average Number of Clusters 10⁻⁸ Temperature T/J 10⁰ 10¹ 10² 10³ 10⁴ Cluster Size s (c) Percolation Strength (d) Algorithm Efficiency 1.0 Fraction of Spins Flipped per Update 0.8 Largest Cluster Size / N WOLFF, L=8 WOLFF, L=48 WOLFF, L=8 WOLFF, L=48 SW, L=8 - SW, L=48 -- SW, L=48 SW, L=8 WOLFF, L=16 WOLFF, L=64 WOLFF, L=16 WOLFF, L=64 -- SW, L=64 -- SW, L=64 SW, L=16 SW, L=16 WOLFF, L=32 WOLFF, L=32 SW, L=32 SW, L=32 2.0 2.1 2.3 2.4 2.5 2.0 2.1 2.3 2.4 Temperature T/J Temperature T/J