(Nearest Neighbor Heisenberg, n=8, t=16, norm=HS) Empirical (Tri PF1) Empirical (Parity PF1)  $10^{3}$ Empirical (XYZ PF1) tight bound (Tri PF1) tight bound (Parity PF1)  $10^{1}$ tight bound (XYZ PF1) tight bound (XYZ PF2)  $^{\omega}$  10<sup>-1</sup>  $10^{-3}$  $10^{-5}$  $10^{1}$  $10^{2}$  $10^{3}$  $10^{4}$  $10^{5}$