Finite-Sample Analysis: Random Polytrees (Fixed Version) Structure Recovery Performance **Error Convergence** -- n=5 (1H, 4O) → n=5 (1H, 4O)  $4 \times 10^{-1}$ 1.0 Structure Recovery Success Rate

O
O
O
O
S  $3 \times 10^{-1}$ Max Discrepancy Error  $5 \times 10^{-1}$   $1 \times 10^{-1}$ 0.2 0.0 10<sup>6</sup> 10<sup>8</sup> 10<sup>7</sup>  $10^{6}$ 10<sup>7</sup> 10<sup>8</sup> Sample Size Sample Size Observed vs Theoretical  $n^{-1/2}$  Convergence n^(-1/2) Efficiency 1.0 1.0 --- Perfect 0.8 0.8 Convergence Efficiency
O
O
O
9 Discrepancy Error 0.0 9.0 0.2 0.2 0.0 + 0.0 0.0 <del>+</del> 0.0 0.2 0.2 0.4 0.8 1.0 0.4 0.6 0.8 1.0 0.6 Sample Size Polytree Size