Finite-Sample Analysis: Random Polytrees (Working Version) **Error Convergence** Structure Recovery Performance → n=10 (2H, 8O) -- n=10 (2H, 8O) 10<sup>3</sup> 1.0 Max Discrepancy Error 101 10<sup>0</sup> 0.2 0.0 10<sup>3</sup> 10<sup>2</sup> 10<sup>4</sup> 10<sup>5</sup>  $10^{6}$ 10<sup>2</sup> 10<sup>3</sup> 10<sup>4</sup> 10<sup>7</sup>  $10^{6}$ 10<sup>7</sup> 10<sup>5</sup> Sample Size Sample Size Observed vs Theoretical n^(-1/2) Convergence n^(-1/2) Efficiency Eff=2.27 --- n=10 (2H, 8O) Theory --- Perfect n=10 (2H, 8O) Observed 2.2 2.0 10<sup>2</sup> Convergence Efficiency 1.6 Discrepancy Error 01 1.2  $10^{0}$ 1.0 10<sup>7</sup> 10<sup>6</sup> 10.4 10<sup>2</sup> 10<sup>3</sup> 10<sup>4</sup> 10<sup>5</sup> 9.6 9.8 10.0 10.2 Polytree Size Sample Size