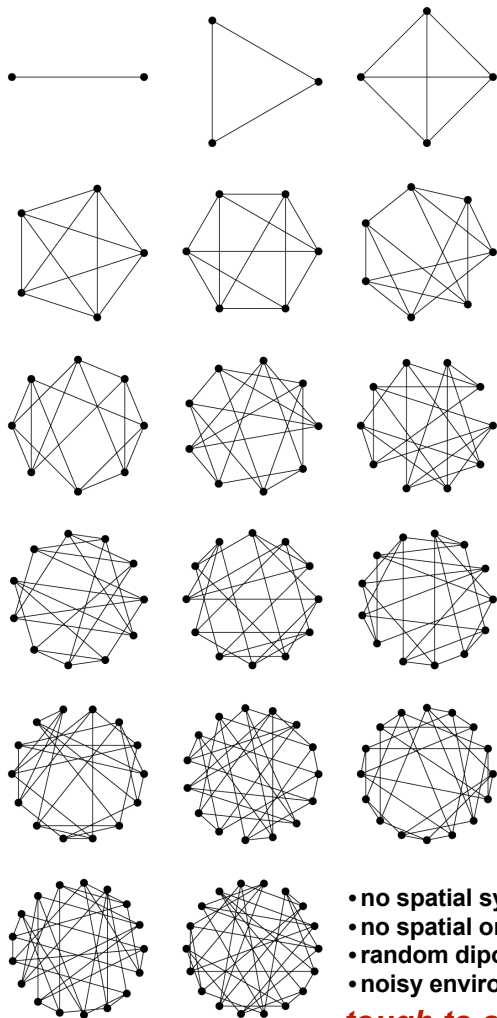


**Q5: Are we confident that quantum spin microscopy will work?**

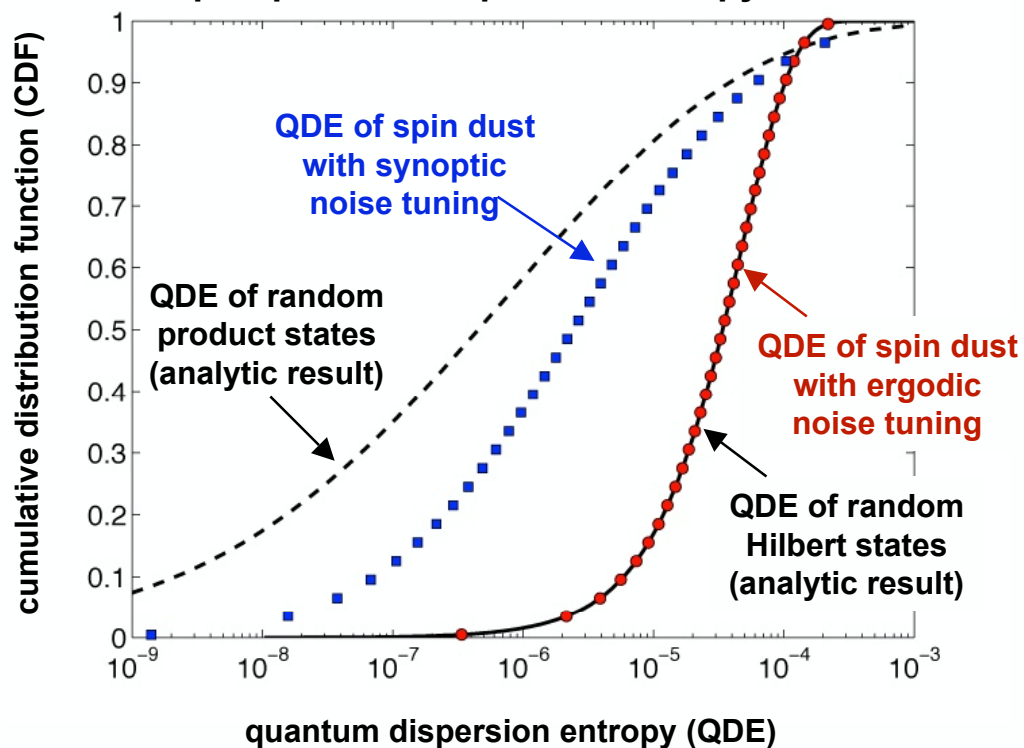
**A5: QMOR generalizes to higher-dimensional spin systems**

**Numerical simulations of high-temperature spin dust**  
 – a deliberately tough challenge –



• no spatial symmetry  
 • no spatial ordering  
 • random dipole coupling  
 • noisy environment  
**tough to simulate**

**18-spin quantum dispersion entropy values**



- Exact 18-spin quantum trajectories yield QDE CDFs that are restricted to an exponentially small fraction of Hilbert space
- *This is good news, because such low entropy values assure us that a compression algorithm must exist (but do not provide an explicit example)*
- Now we are motivated to search for an explicit algorithm that consumes only P-space and P-time resources (see next five slides)