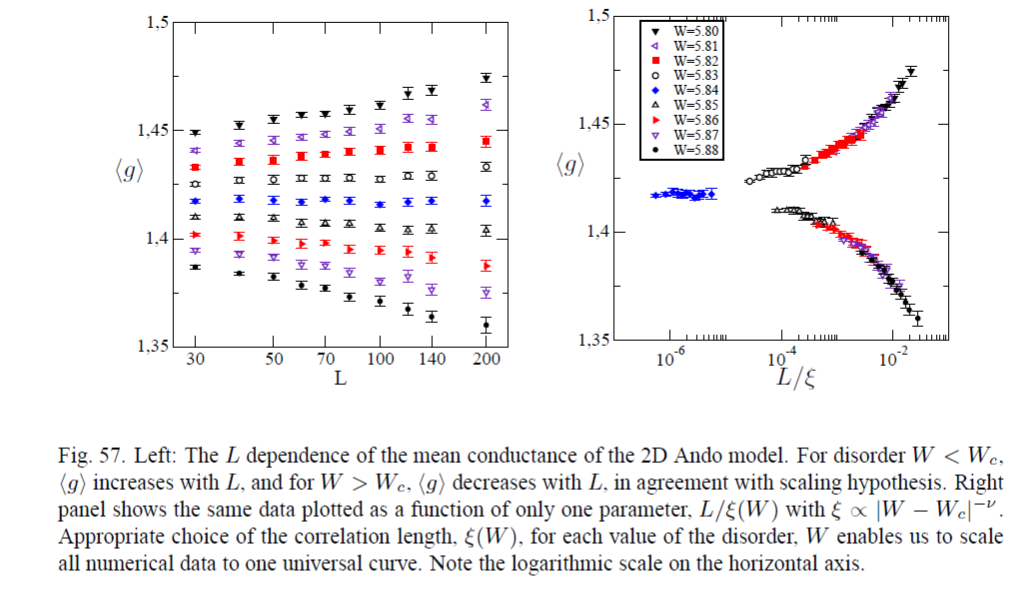
**Numerical Scaling Exponents in d dimensions**

He (Markos) also presents results for the symplectic ensemble, with and without magnetic fields (apparently *both* have phase transitions?). So in general, near criticality, we have:



But is this supposed to be <g> or g\*, etc.? Or would it matter? Or is he using gES instead of some other definition? Below is typical plot. Note that the same critical length, ξ, is relevant to both sides of the transition.



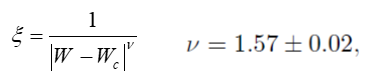
Another way to analyze it is via the first Lyapunov exponent, evidently:

**Scaling exponents in d = 2 + ε**

Anyway, Performing a power law fit on fractal lattices he finds no agreement with NLsM in 2+ε dimensions (perhaps a P(g) scaling equation would do better?). He says that small dimensions can be tricky as finite-size scaling effect show up for system sizes up to only an order larger than the m.f.p. And in low dimensions, the critical disorder is very low and so ℓ is very high. This becomes less of an issue in higher dimensions, where critical disorder is higher (and therefore ℓc lower).

**Scaling exponents in d = 3**

Same analysis in 3D, he finds the following result:



We’ll note this differs substantially from the self-consistent theory which predicts a value of 1, and also of the NLsM, which predicts a value 0.67 or so, if extrapolated from d = 2. Markos contends that it is the absence of self-averaging that makes the analytical theories inaccurate. Not sure where that would enter precisely – aren’t they all calculating <g> explicitly? Perhaps a scaling theory in 3D would do a better job?

**Scaling exponents in d = 4,5**

Analyzing 4D, and 5D systems, he finds the following results. Note the critical exponents (its in the text below the graphs) seem to be closer to the SCT’s predictions in these higher dimensions.

