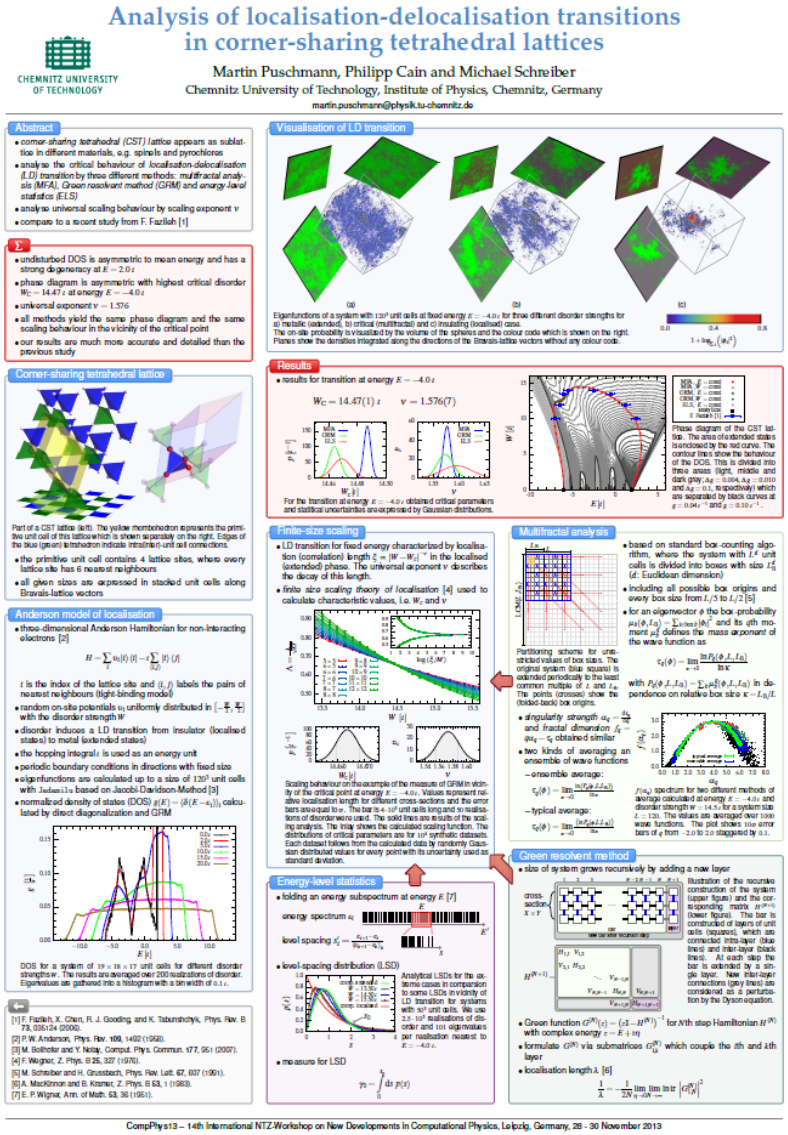
Analysis of localisation-delocalisation transitions in corner-sharing tetrahedral lattices

Short Introduction

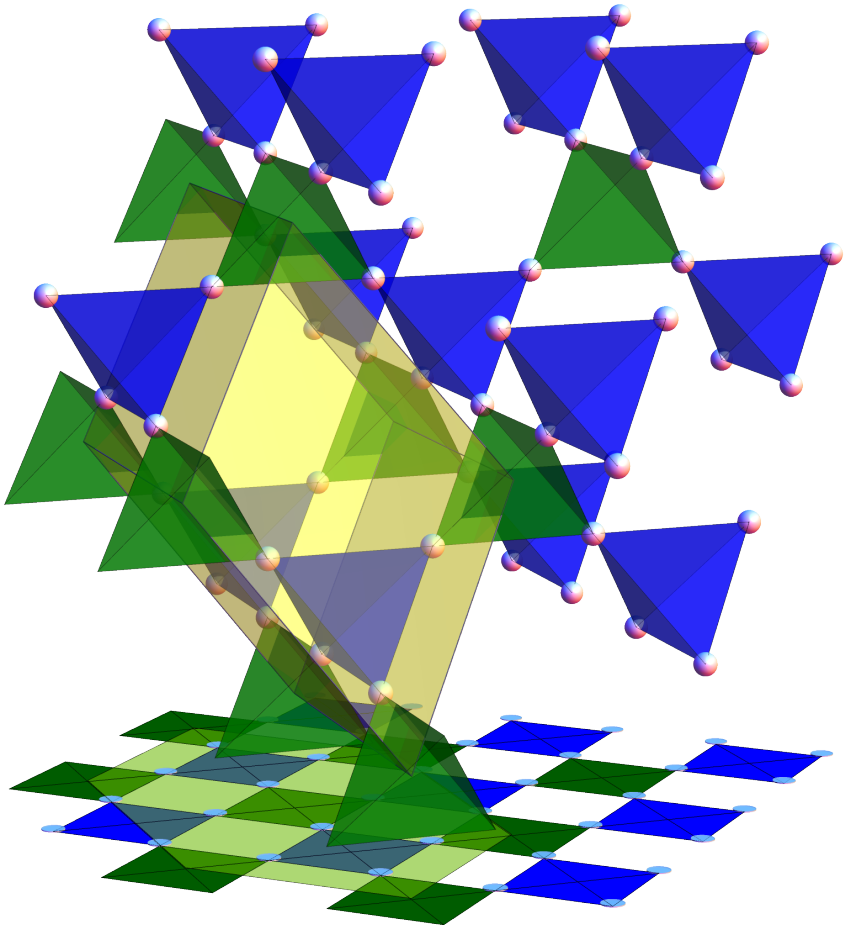


Martin Puschmann

(Philipp Cain and Michael Schreiber)

TECHNISCHE UNIVERSITÄT CHEMNITZ

Corner-sharing tetrahedral lattice



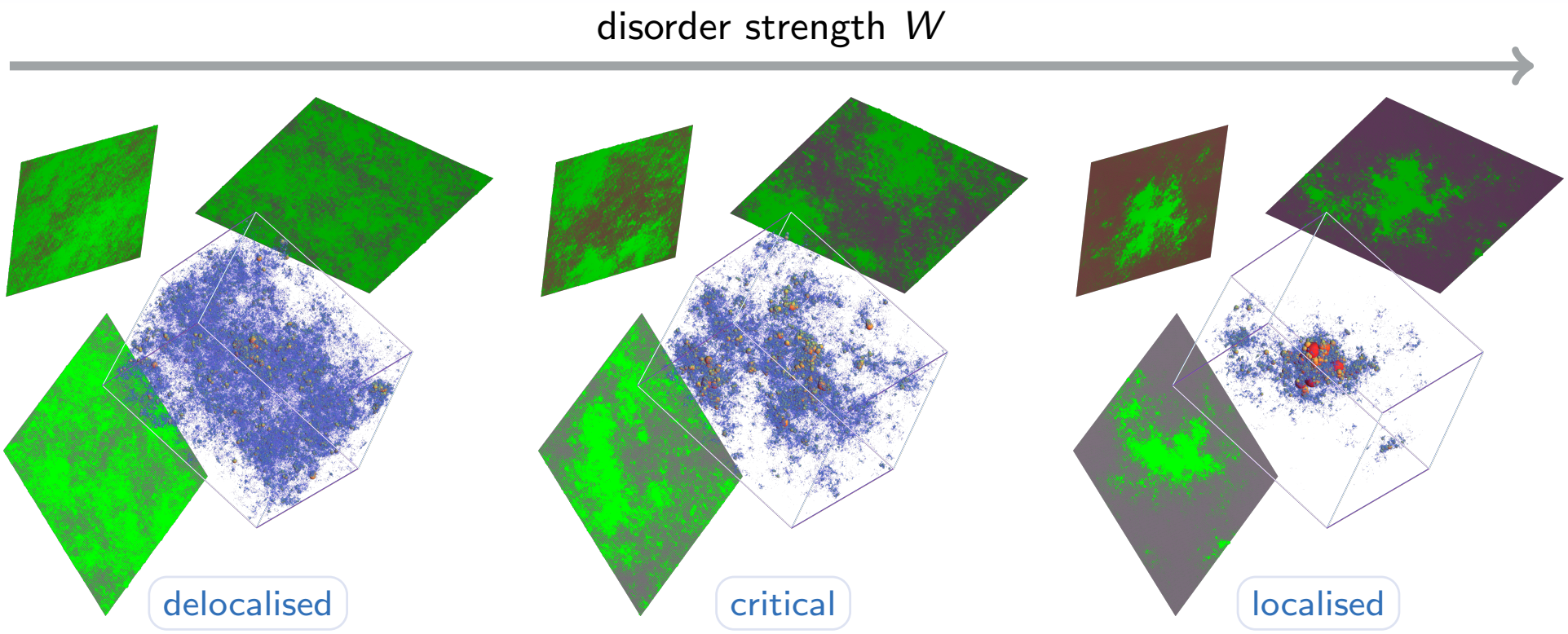
- Anderson Hamiltonian

$$H = \sum_i v_i \left|i\right\rangle \left\langle i\right| - t \sum_{\langle i,j \rangle} \left|i\right\rangle \left\langle j\right|$$

- random on-site potentials

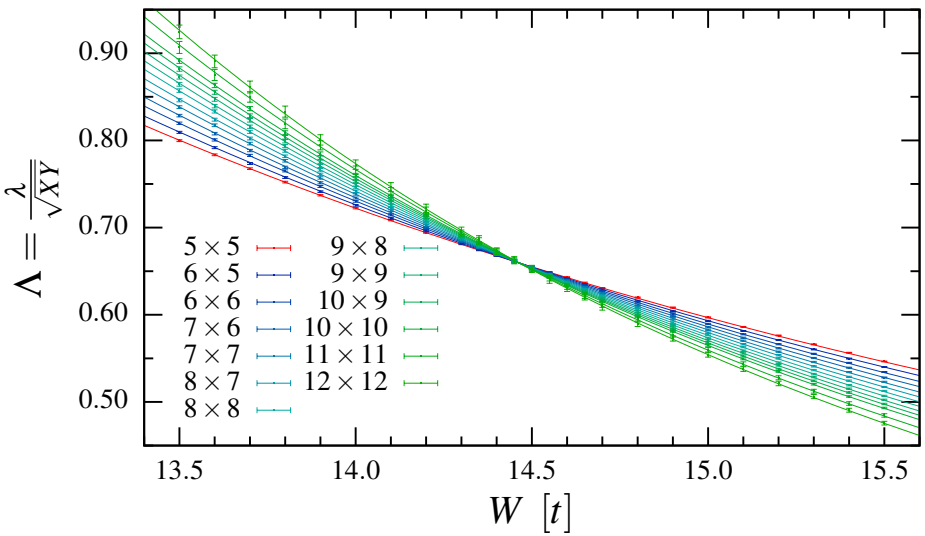
$$v_i \in \left[-\frac{W}{2}, \frac{W}{2} \right]$$

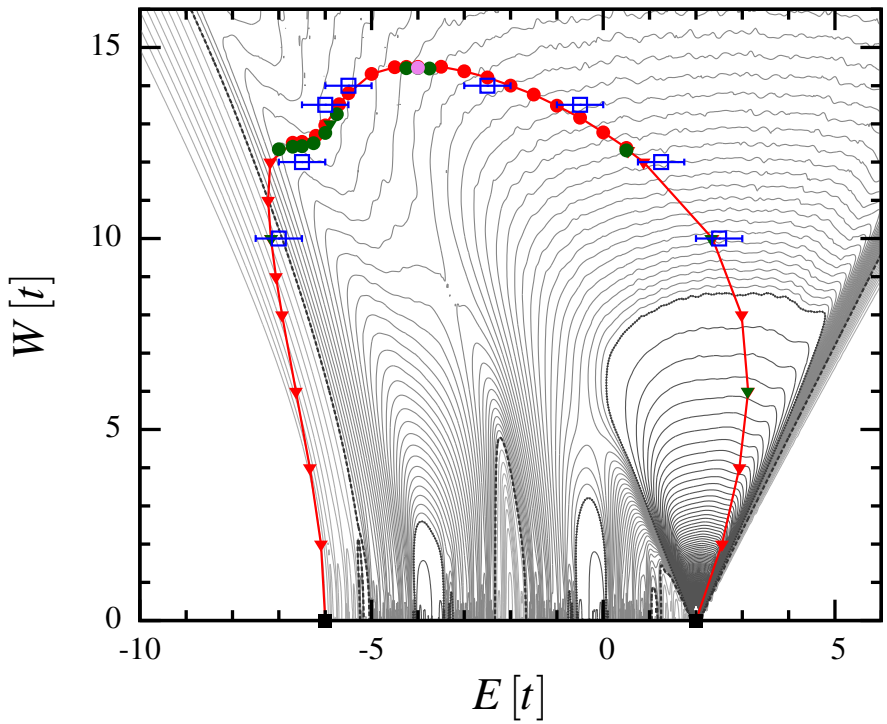
localisation-delocalisation transition



Calculation

- use measures of three different methods
  - multifractal analysis
  - Green resolvent method
  - energy-level spacing
- finit-size scaling in vincinity of critical point





phase diagram