News and views in discontinuous phase transitions JAN NAGLER,
Max Planck Goettingen — Recent progress in the theory of discontinuous percolation
allow us to better understand the the sudden emergence of large-scale connectedness
both in networked systems and on the lattice. We analytically study mechanisms
for the amplification of critical fluctuations at the phase transition point, non-self-
averaging and power law fluctuations. A single event analysis allow to establish
criteria for discontinuous percolation transitions, even on the high-dimensional lat-
tice. Some applications such as salad bowl percolation, and inverse fragmentation
are discussed.

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