

How stubborn anticonformists drive social hysteresis - quenched anticonformity in the multistate q -voter model on networks

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Discontinuous phase transitions are strictly connected to **tipping points**, **critical mass effects** and **hysteresis**



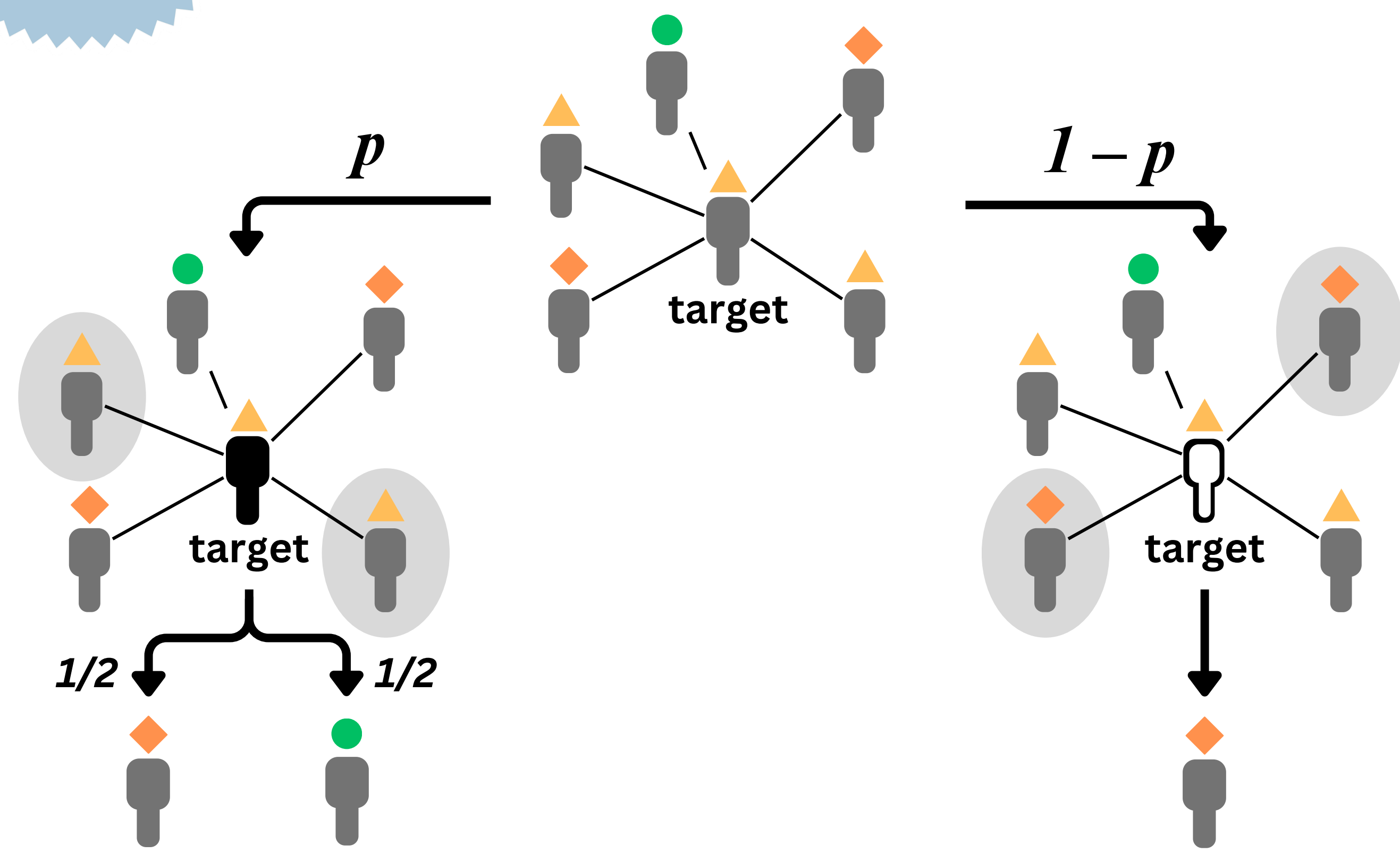
Quenched anticonformity can produce **discontinuous transitions** in the multistate q -voter, contrary to common expectations



To answer if this puzzle **persists** on **networks**, we develop a generalized **pair approximation** for the multi-state q -voter model

$q=2$

Annealed

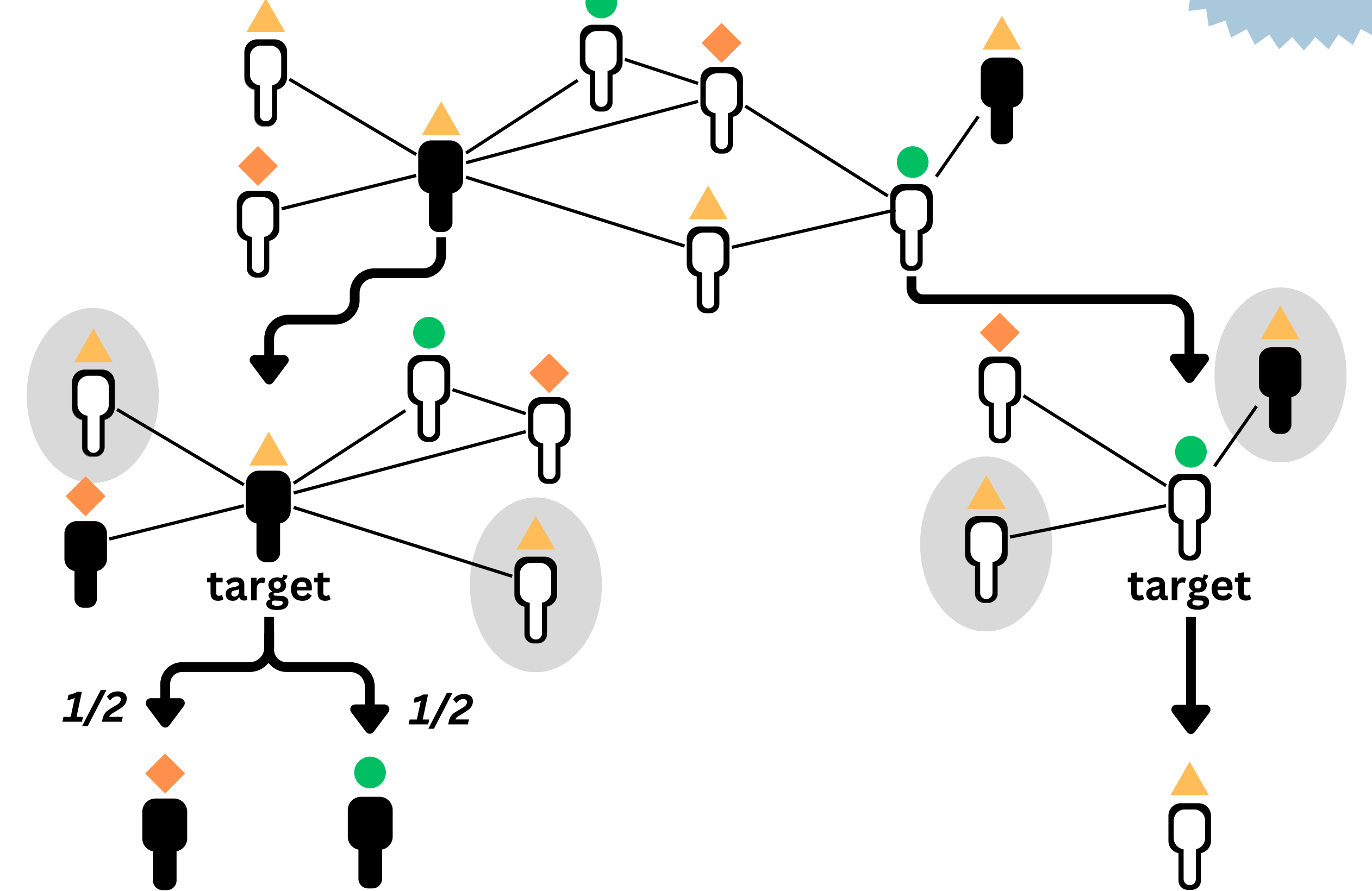


Three-state q -voter model



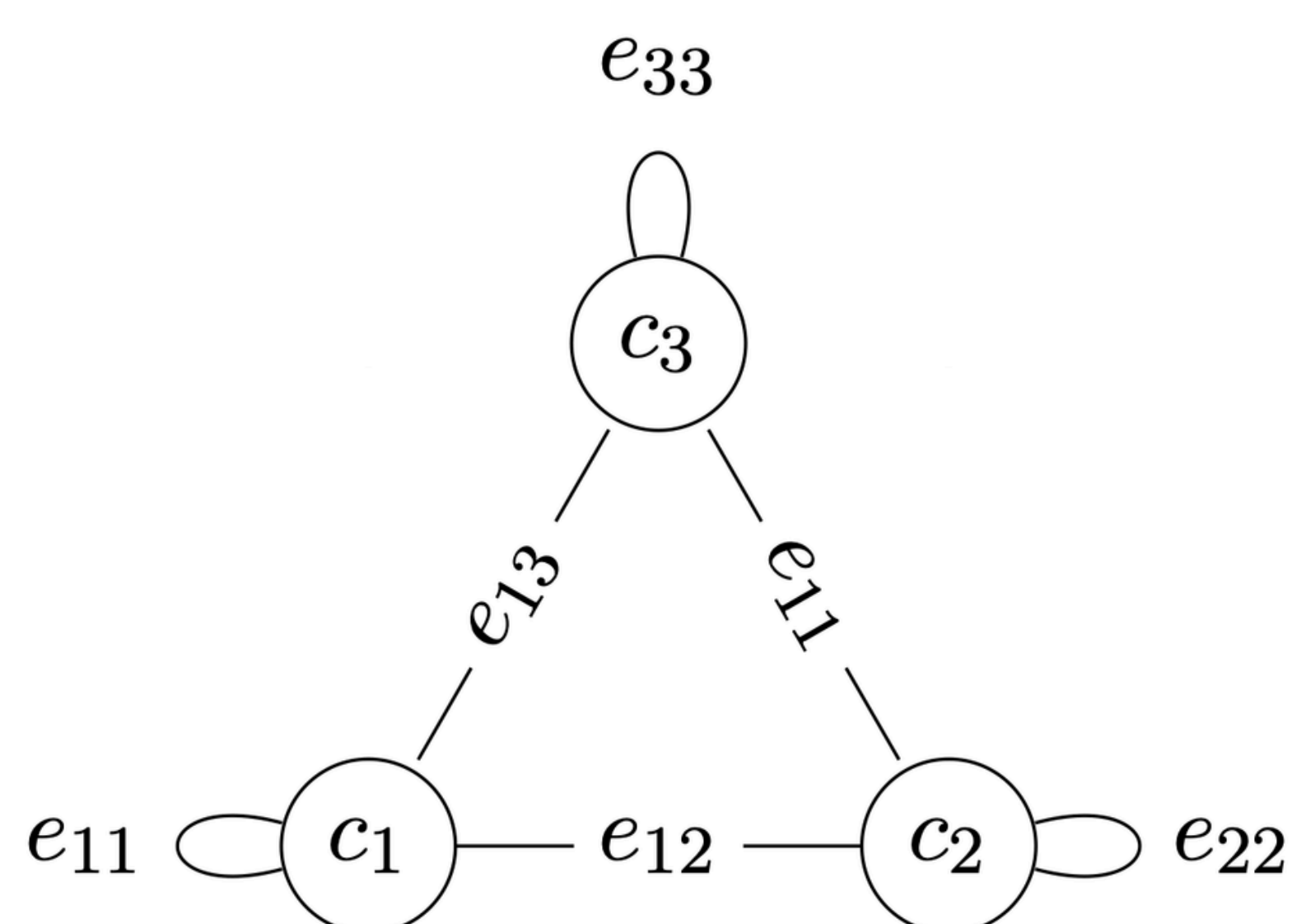
Quenched

$q=2$

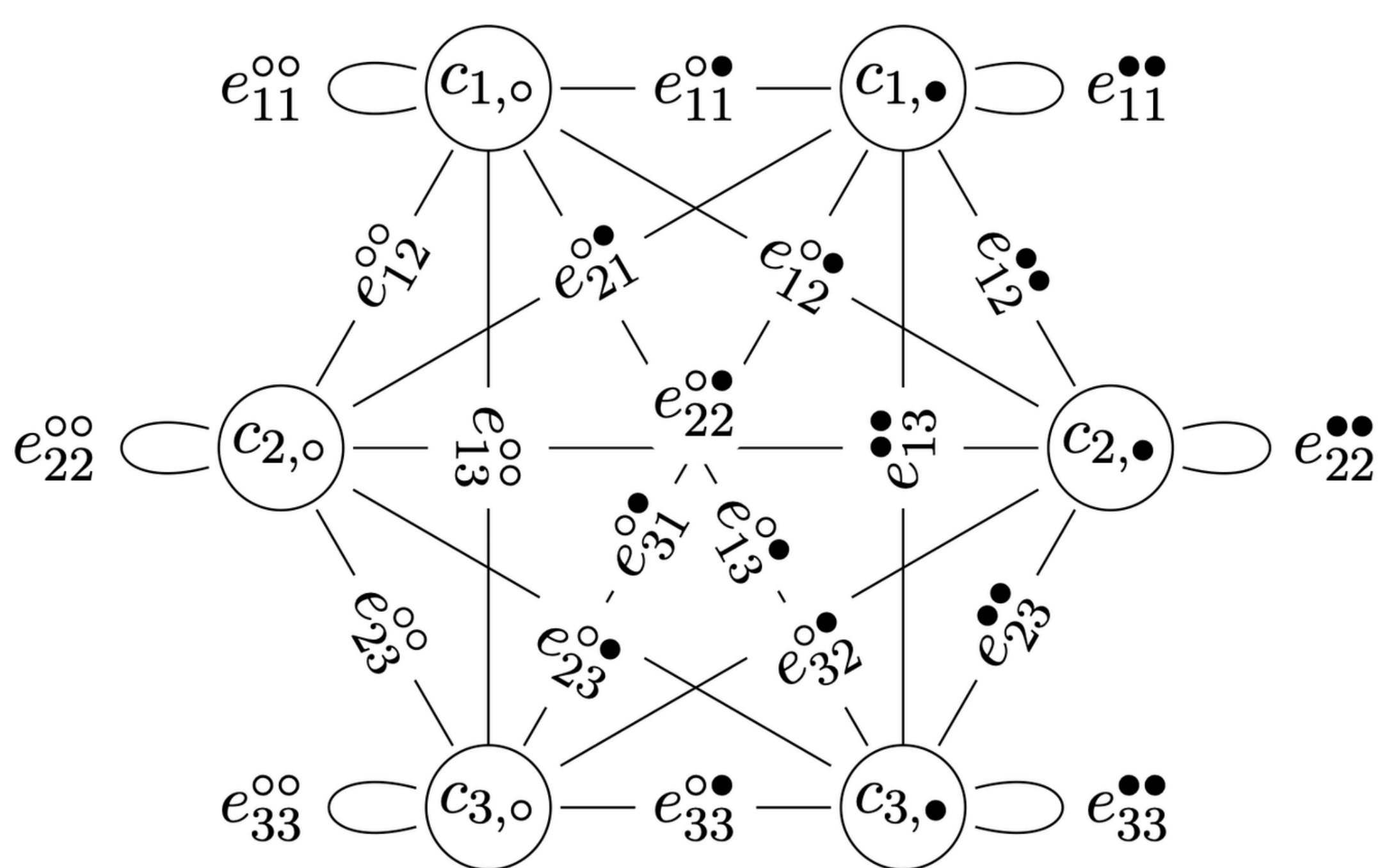


Pair Approximation

Annealed



Quenched



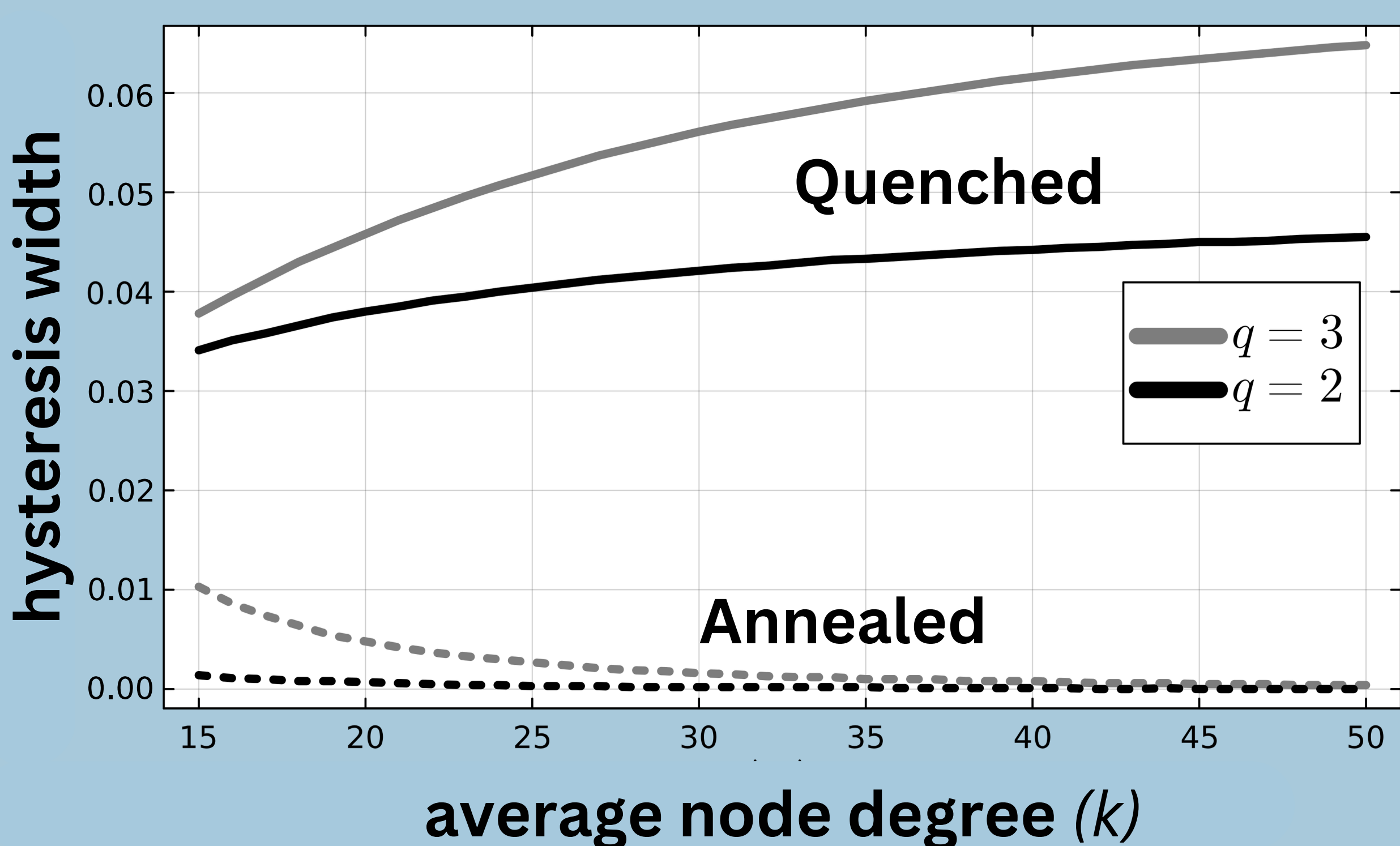
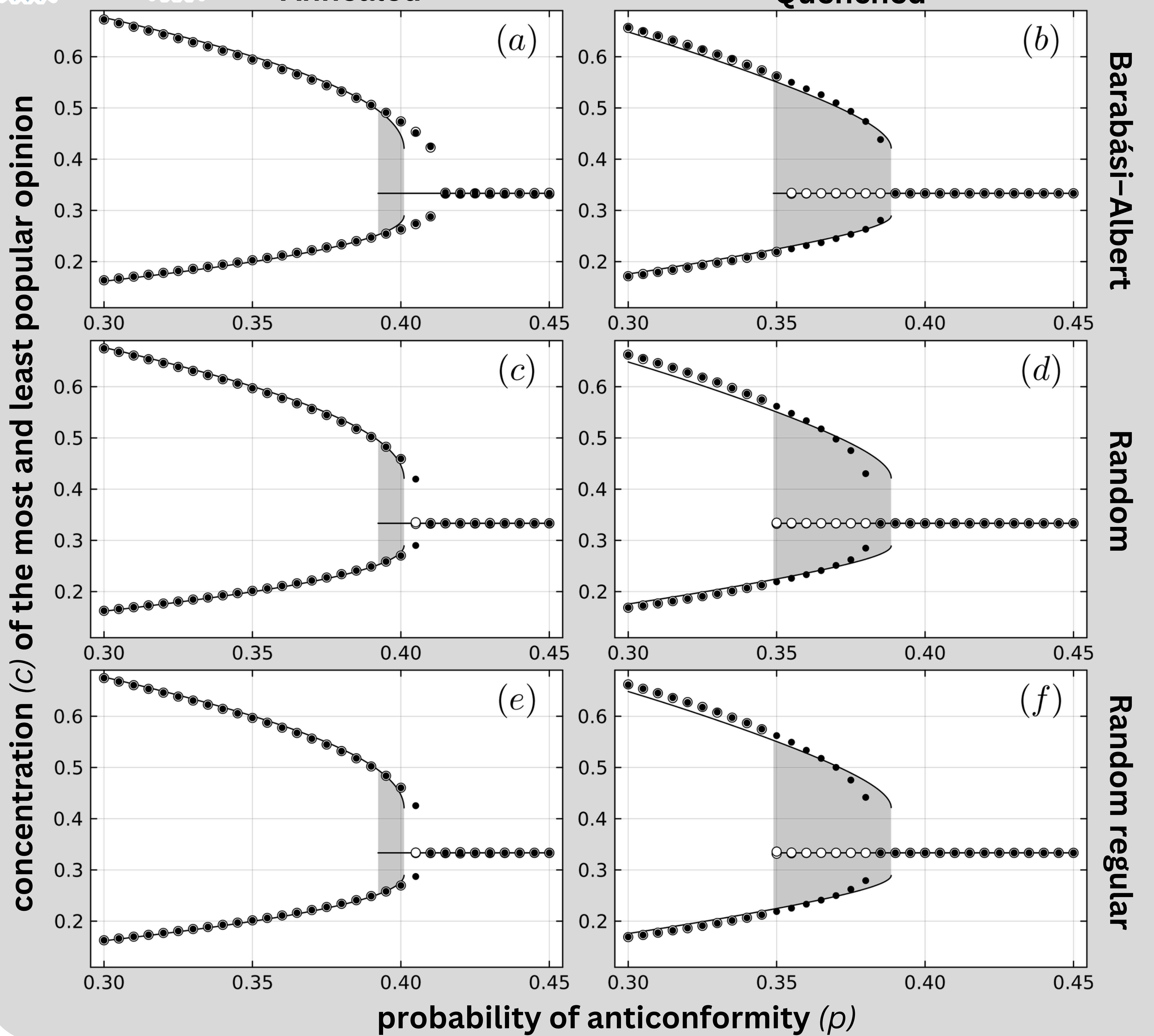
$k=16$

$q=3$

Monte Carlo results

Annealed

Quenched



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