Voting Model and Edge Reconnecting Model CPI

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Voting model

Edge reconnecting model
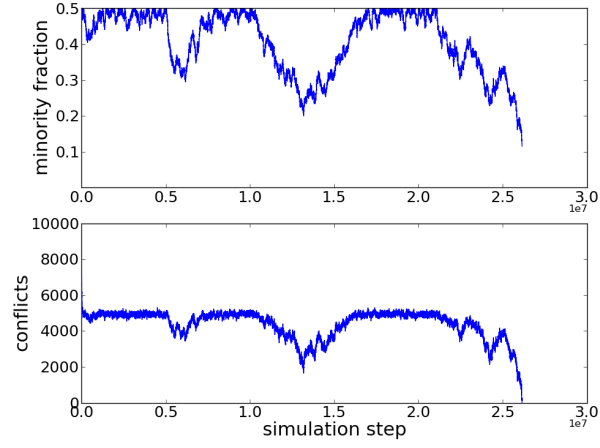
Figure 1: Evolution of conflicts and minority fraction in a single voting model simulation.
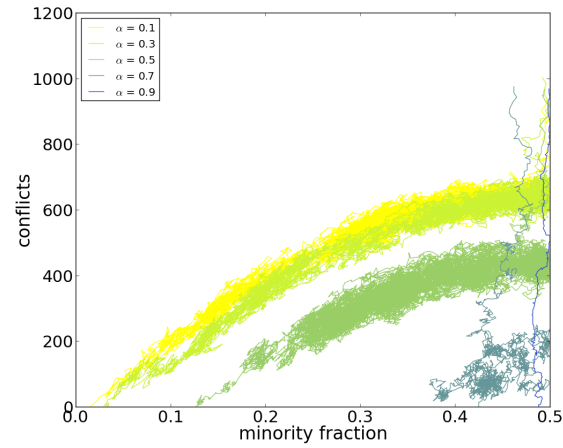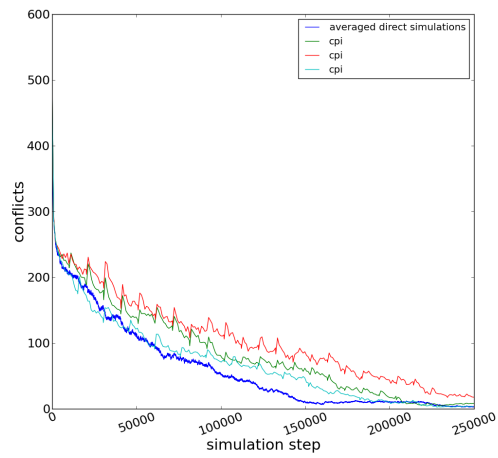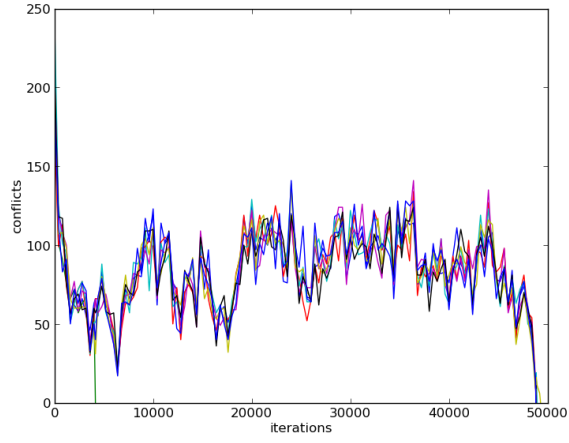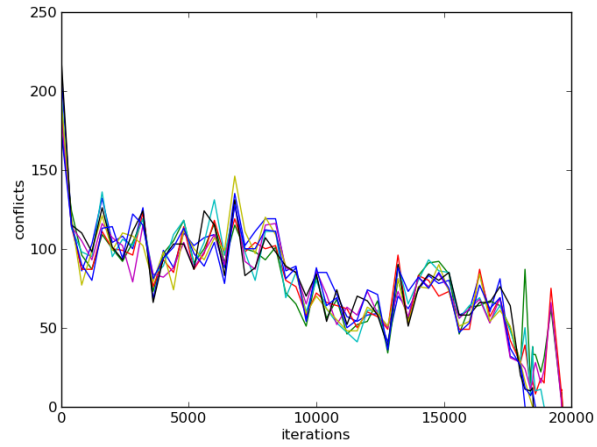

Figure 2: Phase portrait at varying values of α.

Figure 3: "Healing" of voting model back to slow manifold, simulation was restricted and immediately lifted every 10,000 steps.
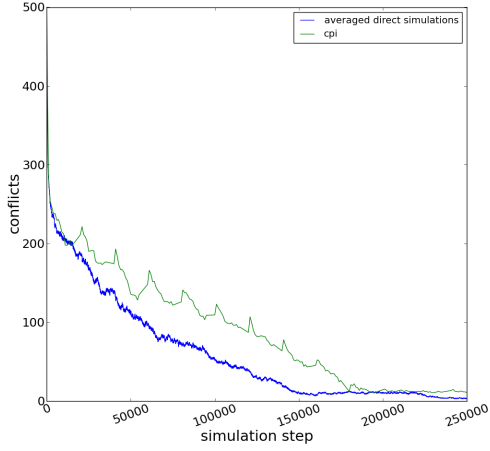
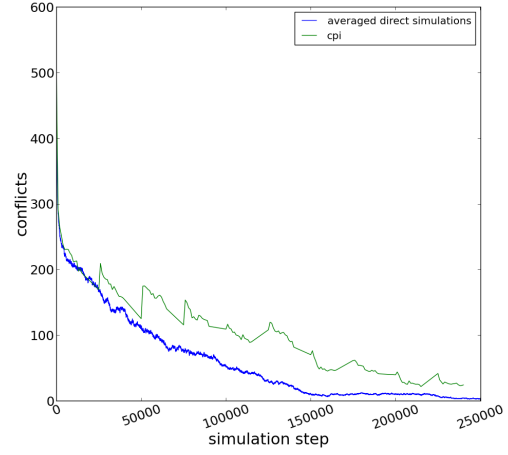(a) Evolved 1000 steps, projected 200.

(b) Evolved 1000 steps, projected 200.

Figure 4: First CPI method in which finished runs in the ensemble are entirely removed from the simulation. This causes slower convergence.

(a) Evolved $15,000$ steps, projected $5,000$.

(b) Evolved $15,000$ steps, projected $10,000$.

Figure 5: Second CPI method in which finished runs in the ensemble contribute their data to the projection step, but are no longer evolved in time. As this amounts to adding zero conflict runs to the ensemble, convergence is faster.
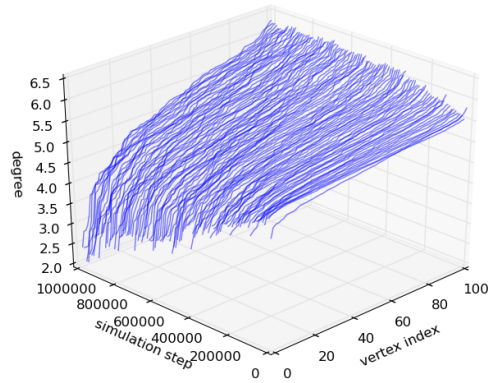
Figure 6: Phase portrait calculated with CPI.

Figure 7: Attempt to visualize the fast, n^2, timescale, on which the degree distribution is expected to remain constant.
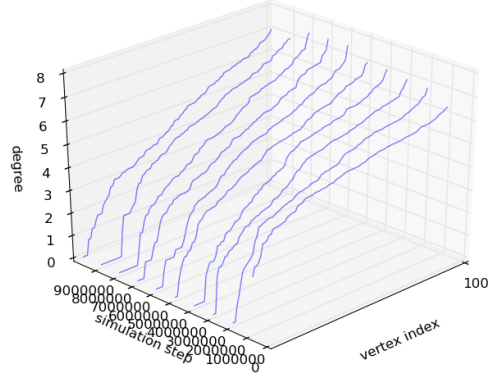
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Figure 8: Attempt to visualize the slower, n^3, timescale, on which the degree distribution should evolves to a steady state.
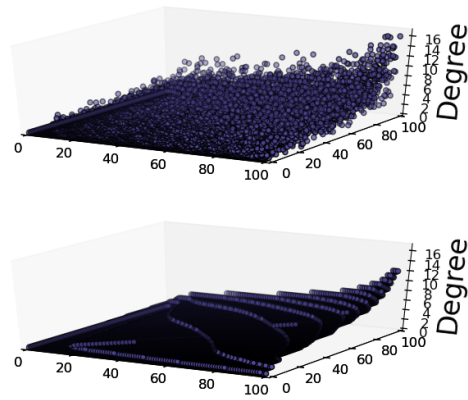

Figure 9: Reconstructin of adjacency matrix using the leading eigenvector and eigenvalue.
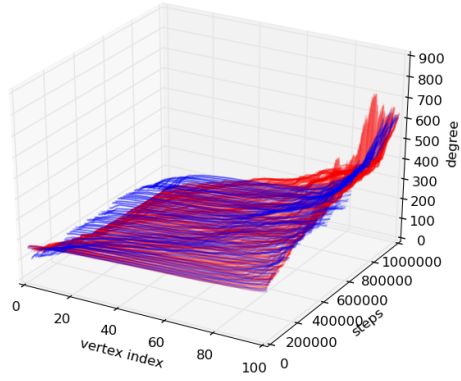
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Figure 10: Evolution of degree distribution during CPI (blue) and direct simulation (red).

Figure 11: Evolution of projected coefficients.