Real-world geometric graphs have low average stabbing number

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Results

- Constant ply disk systems will have $O(\sqrt{n})$ crossings with a random line

- Graphs that are similar in structure also have this property

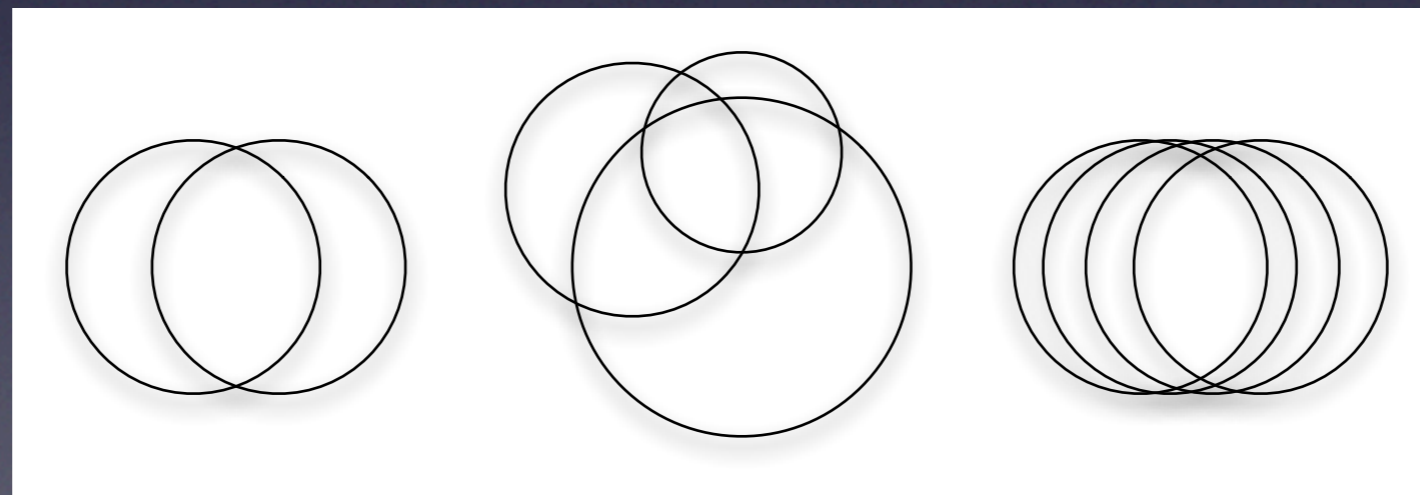 - In particular, we consider bounded-degree multiscale-dispersed graphs

Naturally Associated Disk System

- For each vertex in a graph create one disk, centered at the vertex, with radius 1/2 the length of the longest connected edge
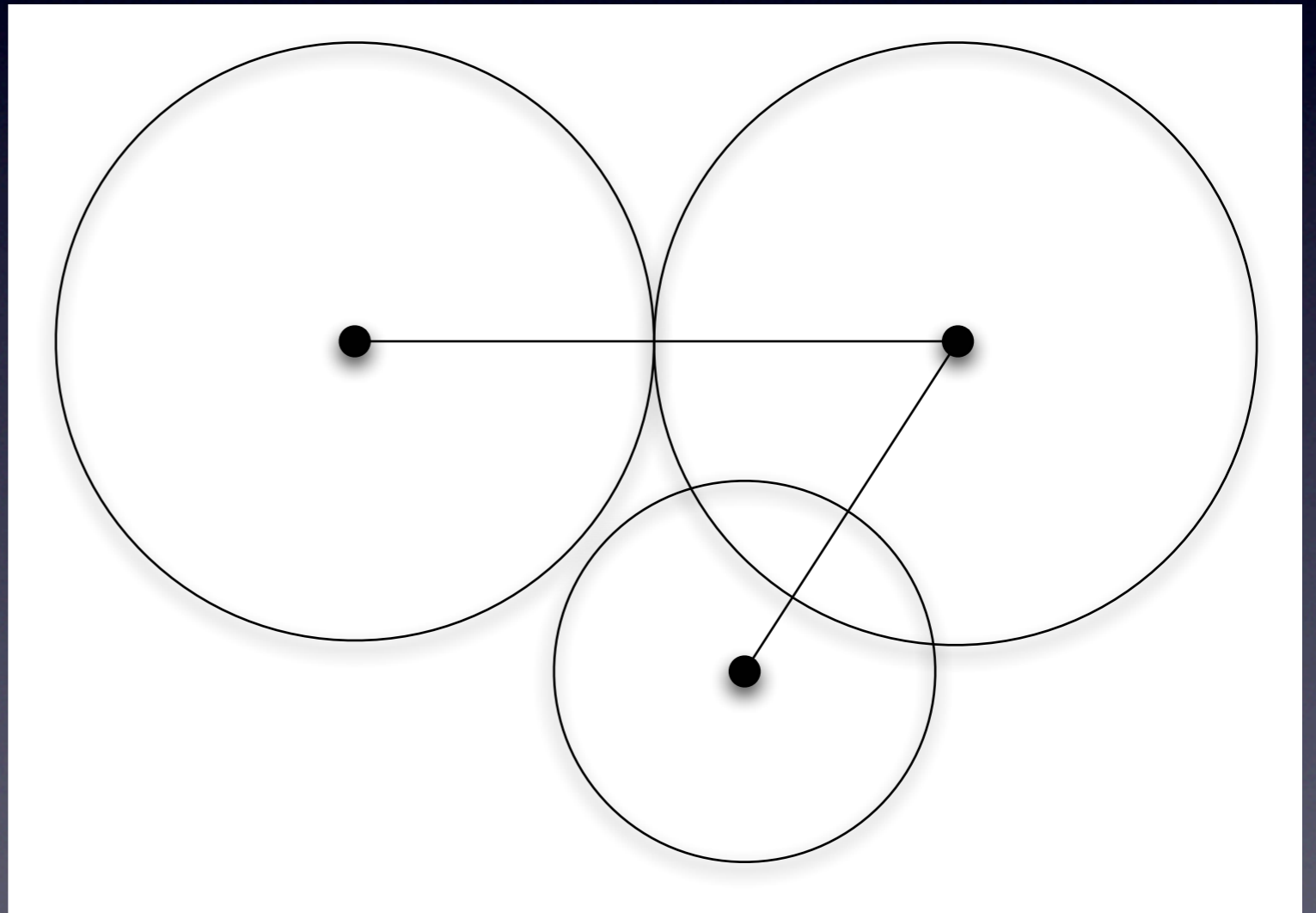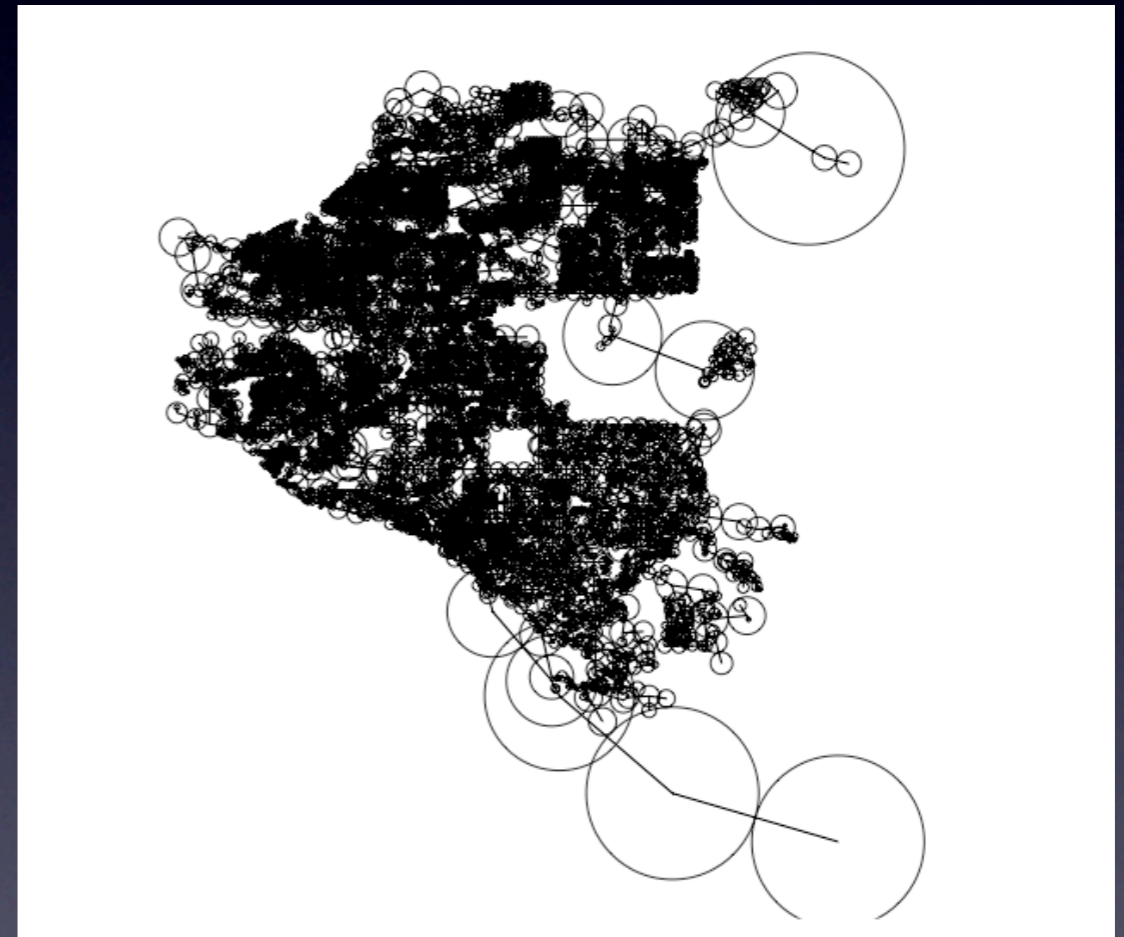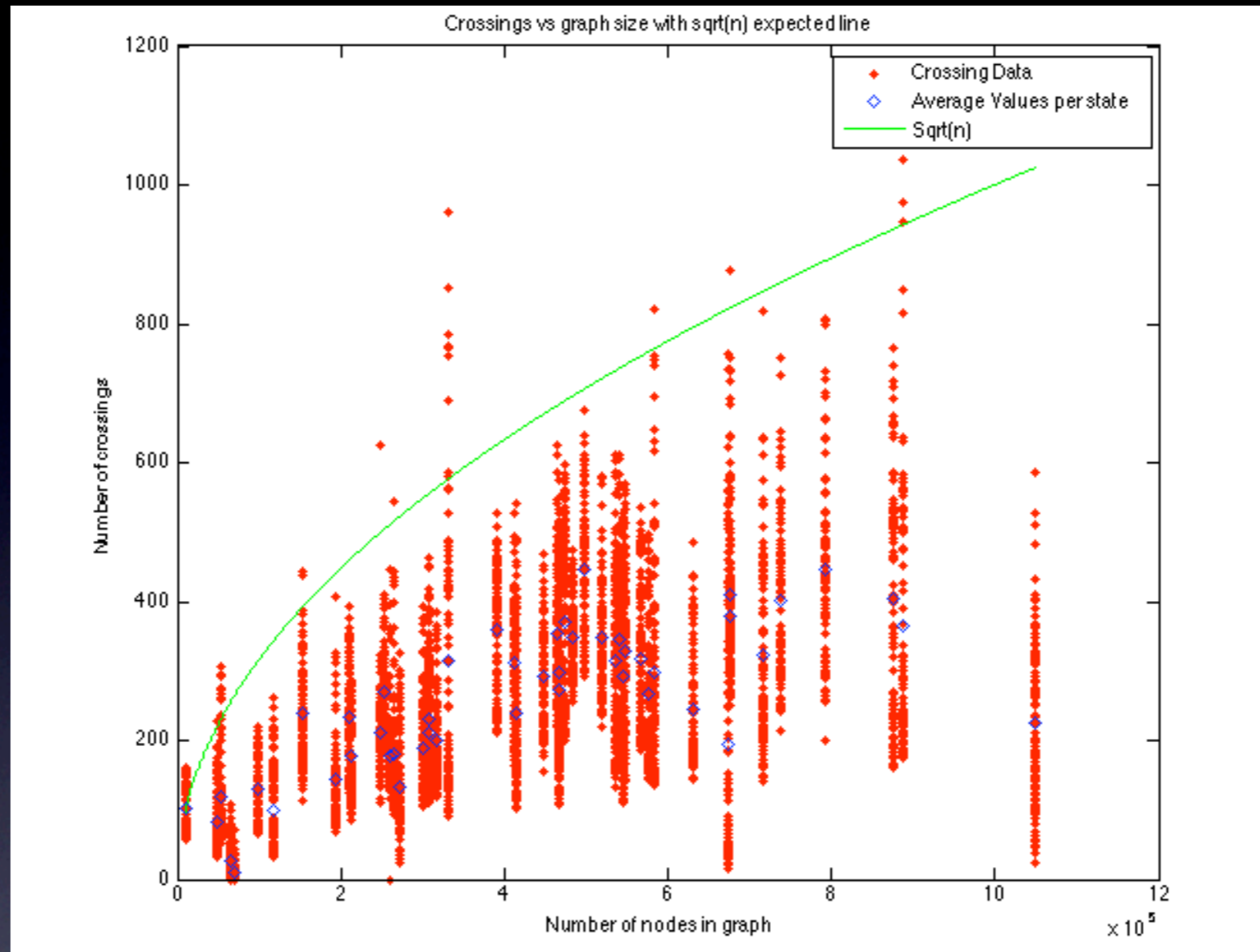
Ply of a Disk System

- The largest number of disks that covering some point in the system

Multiscale-Dispersed Graph

- Graph's naturally associated disk system has constant ply

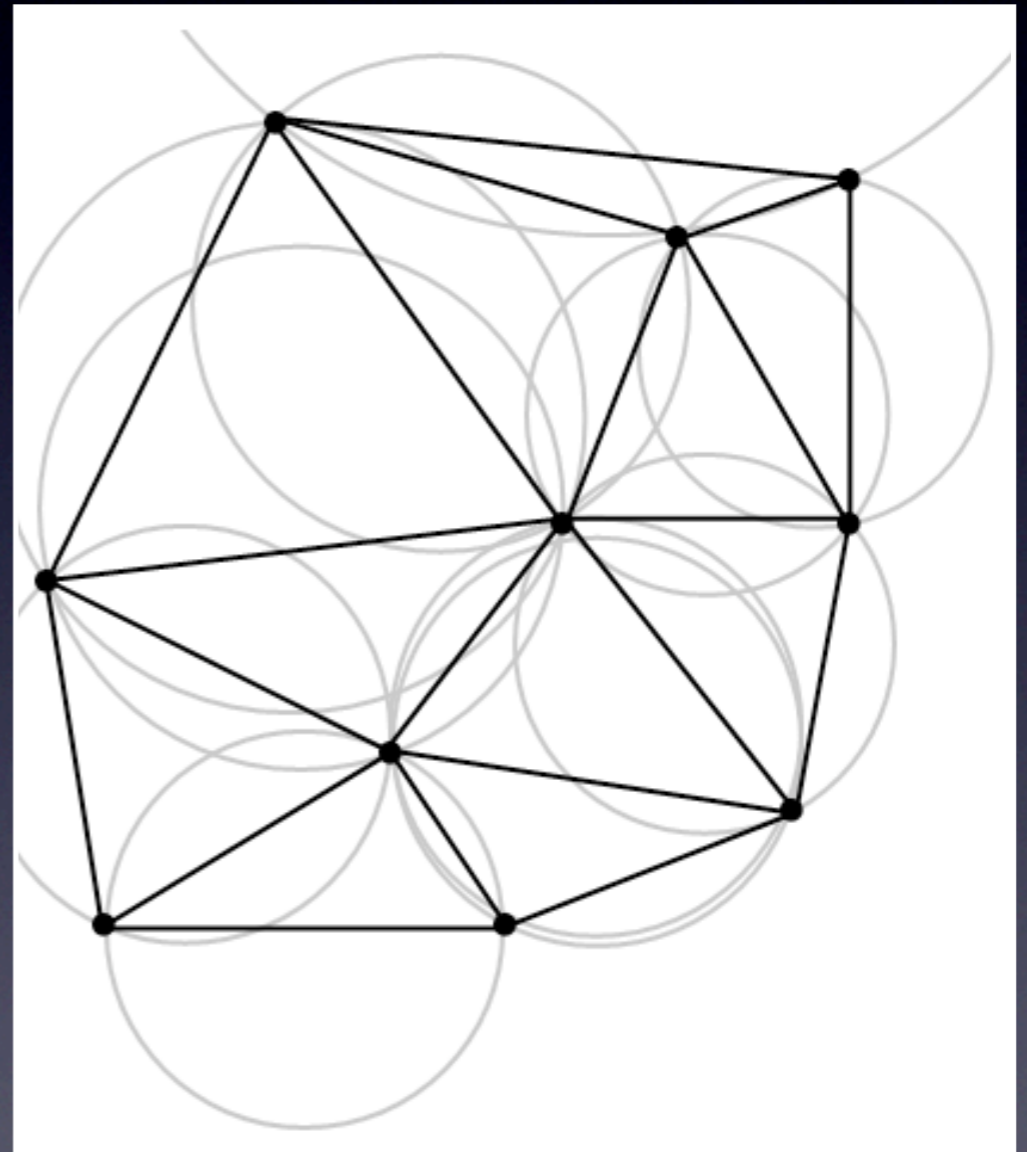 - $O(\sqrt{n})$ exceptional disks are allowed

- Experimental data on U.S. TIGER/Line road network database

Current Work

- Although not true in the worst case, we would like to show that Delaunay triangulations have constant average ply disk systems

  - If so, our conclusions about multiscale-dispersed graphs can be applied to these structures

Questions?