Chimeras Wk 3

numerical continuation? Seidel? PBA on SOLO ≡ numerical bifurcation analysis

LEARN
1. mat conl
2. make plot like his
3. find other notes
4. reread chimeras
5. Andrews website

A = define ...

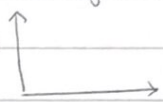
graph(A) keeps topology only not spatial struct
↳ bioinformatics toolbox

glattice M. ← give co-ords for graph

gplot

wgPlot (adj, coord, 'edgeinfo', {}) colour, size etc...

1. steady states not in 1-node model (just?)
2. are there other steady states?
   fsolve find root r divide
3. chimeras paper + look at parameters — always have a stable spiral just before a Hopf bif.
4. Lyapunov fn.?
5. see how diff. graphs modifies struct
6. analytic stability on graph system (paper on this master S.A.)
7. "fragmented landscapes":
   wave initiation of spatiotemporal chaos | for nL sys. | lyapunov fn. for this fn. gives global stability
   image sc (A) lattice adj. matrix



most chimera papers focus on lattices
(recreate for random graphs)
nonlocal/normal lattices (1D/2D)
(percolation theory P(1) - over 50% cuts no longer connected)

odeIS = (10^{-9}, 10^{-15}) ← tolerances

Tspan ⇓ h } decide time steps

rand(4) < 0.9 (keep 90% of links) need to be symmetric

- 1 node lattice
- complete graph } harder to find chaos (synchronises) see if sim. same.
- percolation

"how does spatial fragmentation impact ecosystems"

chaos (n>2, RM n≥2 but usually >2

02/02/21

chimeras not attractors will go to chaos or synchrony
└ transient phenomenon

long time behaviour $t \propto e^{nt}$

RMT messier than most papers

ecological interpretation - research spatial ecology

math cont:

0-1 test
~~0 tester~~ detects if time series chaotic - on MATLAB file exchange
(read caveats first)

feed ts at a node to check
long sims.

Cornell uni user guide