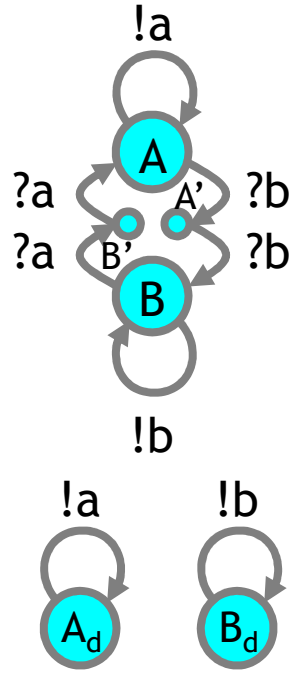
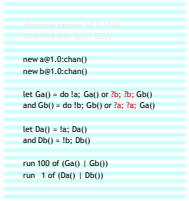
Exercise 2

Q: What does this do?





$A = !a_{(r)};A \oplus ?b;A'$ $A' = ?b;B$

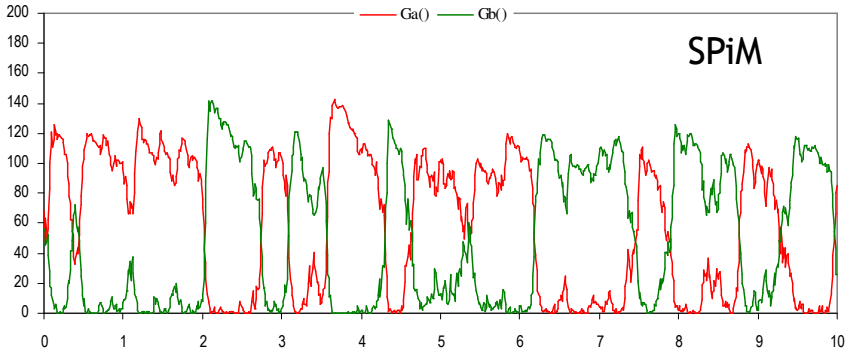
$B = !b_{(r)};B \oplus ?a;B'$ $B' = ?a;A$

$A_d = !a_{(r)};A_d$

$B_d = !b_{(r)};B_d$

Derive the ODEs from these "Hysteric Groupies" automata. Either by going through the chemical reactions and the Law of Mass Action (easier), or directly from the Process Rate Equation.

Stochastic Answer:
robust quasi-oscillation



ODE predicts dampened oscillation, while the stochasic system keeps oscillating at max level.

Deterministic Answer:
dampened oscillation