Eventually a global cap & trade regime

USA
Europe
Former Soviet Union
India
China
Japan

Intermediate agreements between groups of players

Common carbon market without agreement on caps

Eventually a global cap & trade regime

Coalition Formation as a Markov chain
State = what markets and cap agreements exist (thousands of possible states)
Transition = sign or terminate an agreement on market formation and/or cap coordination

Long-term profitability determined from state payoffs, transition probabilities & farsightedness

Transition probabilities determined from profitability, preferences & bargaining power

Major permit sellers typically prefer to enter early
Permit buyers typically prefer to enter late

Typical result for wide range of parameters
Global cap & trade emerges bottom-up in surprisingly few steps

If treaties were irreversible, complexity would increase with farsightedness

Questions for physicists
Stability of process & updating?
Basins of attraction?
Bifurcations / behaviour when parameters change?

Reference
Jobst Heitzig, Bottom-up strategic linking of carbon markets: Which climate coalitions would farsighted players form?
EAERE 2012 / GAMES 2012 conference paper