Self-Organized Systems

- *Objective:* Engineer some kind of heuristics for controlling what emergent behaviors are selected in order to fulfill certain goals

- *Characteristic:* Emergent properties are by essence non-deterministic

- We try to "drive" the selection process by adding some determinism

- Specifying management goals is not too difficult
  - we know already how to do that

- Translating management goals into selection directives is difficult
  - to date we do not know how to achieve that

Management Systems

- In distributed management, the objective is to decentralize certain control loops down to the level of systems

- Each system has
  - detailed knowledge of its constituents (hopefully)
  - partial or no knowledge at all of the other systems

- Rules and policies are deterministic

Can Management Systems Leverage Self-Organization?

- Giovanna Di Marzo Serugendo, University of Geneva, CH
- Alexander Keller, IBM Watson, USA
- Robert Laddaga, MIT, USA
- Marc Pucci, Telcordia, USA