**Game Theory – Modeling and Computation**

### Cognitive Radio

- **Spectrum Efficiency**
- **Flexible Spectrum Use**

### Nonlinear Pricing

- Application of mechanism design
- Lagrange multipliers
- Buyers' preferences unknown to seller
- Gradient method

### Repeated Games

- Algorithms to compute strategies and payoffs
- **Prisoner's Dilemma** (Tucker 1950)
- **Hawk-Dove or Chicken** (Russell 1959)
- **Cuban Missile Crisis 1962**
- **Stag Hunt** (Rousseau 1754)

### Theory Behind Computational Models

- Nash Equilibrium, fixed point of best-response correspondence (Nash 1950)
- Incentive compatibility (Hurwicz 1972)
- Subgame perfect equilibrium payoffs, fixed point of iterated function system (Abern 1988)
- Hausdorff dimension to digraphs (Mauldin and Williams 1988)
- Fractals by iterated function systems (Hutchinson 1981)

### Selected Publications

- K. Berg and G. Schoenmakers: How patient the players need to be to get all the relevant payoffs in the symmetric 2x2 supergames? *Manuscript*, 2014
- K. Berg and M. Kärki: How patient the players need to be to get all the relevant payoffs in the symmetric 2x2 supergames? *Manuscript*, 2014
- K. Berg and H. Ehtamo: Multidimensional planning online computation and limited information. *10th Int. Conf. on Electronic Commerce*, 2008

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**Game Theory**

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