

Seminar: Theory of Complex Systems (Summer Semester 2016)

potential seminar presentations

- Three and N- Body Problem [1-3]
- Facets of Chaos and a new lithmus test for chaos[4,5]
- A tale of two maps: Logistic vs. Lorenz [6,7]
- Fractal Structures in Nonlinear Dynamics [8]
- Transient Chaos [9,10]
- Synchronization of chaotic systems [11]

Literature:

- [1] ZE Musielak, B. Charles, The three body problem, Rep. Prog. Phys. **77**, 065901 (2014)
- [2] F Diacu, The solution of the n-body problem, Math. Int. **18**, 66 (1996)
- [3] Q-D Wang, The global solution of the n-body problem, CMDA **50**, 73,(1991)
- [4] E Sander, JA Yorke, many facets of chaos Int'l. J. Bifurcation and Chaos 25, 15300011 (2015)
- [5] BR Hunt, E Ott, defining chaos, Chaos 25, 097618 (2015)+ EurekAlert 28-Jul-2015
- [6] R Gilmore, explosions in the Lorenz maps, Chaos, Solitons & Fractals 76, 130 (2015)
- [7] R Gilmore, a tale of two maps (talk, pdf file, Le Havre 2014)
- [8] J Aguirre, R L Viana, MAF Sanjuan, Fractal structures in nonlinear dynamics, RMP **81**, 333 (2009)
- [9] T Tel, the joy of transient chaos, Chaos 25, 097619 (2015)
- [10] YC Lai, T Tel, Transient Chaos,- complex Dynamics on finite time scales (Springer 2011), chapters 1,2 (3)
- [11] S Boccaletti et al, The synchronization of chaotic systems, Physics Reports 366, 1 (2002)
- [12] Callenbach et al. , Synchronization of simple chaotic flows, Phys. Lett. A 287, 90 (2001)