

# Summer Semester 2022

## Introduction to Computational Physics (UKWR2)

**Lecturer: Rainer Spurzem**

**Lecture, Wed 9:15-11:00, Fri 11:15-12:00**

**Tutorials, Mon/Fri 13:15 - 16:00**

**Participants can choose Monday or Friday tutorial.**

Lecture and Tutorials will be offered in **English Language**.

### Lecture Time Plan    V7 June 15, 2022

*Tutorial will appear Wednesday as given in the list - return is usually Friday of the following week. (All data are subject to change depending on progress of lecture)*

Wed 9.15	Fri 11.15	Tutorial Number	Chapter-Number: Topic (in old skript see webpage)
20.4	22.4.	1	Introduction, 1-3: Practical Exercises
27.4	29.4.	2	4: Ord. Diff. Eqs. (ODE) I: Two-Body, Euler, Leap Frog
4.5.	6.5.	3	4: ODE II: Runge-Kutta (2,4), 3-body problem
11.5.	13.5.	4	6: ODE III: Numerov-Algorithm, Schrödinger Equation
18.5.	20.5.	5	4: ODE IV: Popul. Dyn., Fixed Points, Stability, Mathematica
25.5.	27.5.	6	*: ODE V: Fixed Points multi-D, Pop.Dyn., Lorenz
1.6.	3.6.	-	*: ODE VI: Lorenz-Attractor, Nonlinear Dynamics
8.6.	10.6.	7	7. Discrete Maps
15.6.	17.6.	8	5. Lin. Alg. I / Introduction, Gauß-Jordan
22.6.	24.6.	9	5. Lin. Alg. II / Householder / tridiag. / Schrödinger-Eq.
29.6.	1.7.	10	8: Random Numbers
6.7.	8.7.	11	9: Monte Carlo
13.7.	15.7.	12	9: Ising Model I
20.7.	22.7.	-	Preparation Week (lecture?) Outlook
27.7.	29.7.	-	Exam Week (no lecture)

\*: Lorenz-Attractor additional reading material will be handed out.

Public Holidays: May 26 (Thu), June 6 (Mon), June 16 (Thu)

First Tutorial Sheet issued: Wed April 20, to be turned in Fri April 29.

Begin of Tutorials: Fri April 22 / Mon April 25.

Due to public vacation there will be no tutorial on Monday June 6.