Suggested Projects in the chaos course

A. Idini (A), S. Åberg (S)

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The project is a compulsory part of the course and corresponds to 1.5 hp (one week of full time work, and then some). You are suggested to work in groups of two persons, but in special cases you can work alone. The project shall be presented in a written report - there is no oral presentation. Only two kinds of marks are given on the project part: *passed* or *not passed*.

- Bachelor students can choose one project from the list below, and are welcome to suggest their own project.

- Master students are strongly encouraged to suggest their own project.

- PhD are expected to choose their own project.

You are welcome to suggest your own project or choose one from the list below. The responsible person is identified as: S (Sven Åberg) and A (Andrea Idini).

Sign up with Gunnar for a project as soon as possible - a project can in general be performed by one group only.

1. Set up and solve a simple model for propagation of fire in a forest (S)

2. How is crystal growth changed under a strong voltage? (S)

3. Compose fractal music! (S)

4. What is the time to cross Mårtenstorget on a Saturday? (S)

5. Study basin of attractors for zeroths of the complex function $z_n - 1 = 0$, solved by Newton-Raphson method. (S)

6. Study the onset of chaos on a pool table. Assume point-like balls. (S)

7. Study the onset of chaos and diffusive behavior of the "kicked rotor". (S)

8. Using cellular automata, develop the model of an ecosystem. (A)

9. Study the flows related to market behaviour in monopoly and oligopoly condition. (A)

10. Study how clouds are formed (self organizing system. (A)

11. Study the literature on Chaotic behavior of the weather. (A)