Exercise(s) 28. 5. 2026

The last exercise is to be handed in at the beginning of the next lecture.

29. Study the dynamics of the general normal form of a Hamiltonian in two degrees of freedom near an equilibrium in 1:3 resonance. How many different cases are there?

30. Compute for the Hamiltonian

$$H(q,p) \;=\; \frac{p_1^2+q_1^2}{2} \;+\; 3\,\frac{p_2^2+q_2^2}{2} \;+\; 2q_1q_2^2$$

in 1:3 resonance the normal form polynomial of degree 4.