Exercise(s) 26. 3. 2026

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

15. Solve the equations of motion for a system on $\mathbb{T}^n \times \mathbb{R}^n$ given in action angle co-ordinates. What are the possibilities for the flows on $\mathbb{T}^n \times \{y\}$?
16. Verify that the identification of the Lie algebra $(\mathfrak{so}(3), [..,..])$ with $(\mathbb{R}^3, \times)$ turns the adjoint action $\mathrm{Ad} : (g, A) \mapsto T_e(R_{g^{-1}} L_g) \cdot A$ of $SO(3)$ on its Lie algebra into the standard representation of $SO(3)$ on $\mathbb{R}^3$. Show that the tensor of inertia provides in body co-ordinates the relation $\ell = I\Omega$ between angular momentum and angular velocity.