





# IDALAB

EFFICIENT DATA ANALYTICS SOLUTIONS



PARIS  
LODRON  
UNIVERSITÄT  
SALZBURG

Tutorial RL Bootcamp Salzbun

Senior High School

- Wellstudied in several papers/thesis

Linear Dynamics with up to 10 degrees of freedom in actions and states

• Non-trivial identities



• Analytical benchmark policy

- Easy to understand, focuses on the RL problem not the MDP

- The simulation corresponds exactly to a real system

- All our algorithms were tested on the real machine



**CERN AWAKE steering problem**

# CERN AWAKE steering problem

- Well studied in several papers/thesis
- Linear Dynamics with up to 10 degrees of freedom in actions and states
- Non-trivial due to action limitations
- Analytical benchmark policy
- Easy to understand, focus on the RL problem not the MDP
- The simulation corresponds exactly to a real system
- All our algorithms were tested on the real machine

# CERN AWAKE steering problem

Markov decision process:  $(\mathcal{S}, \mathcal{A}, \mathcal{R}, \mathcal{P}, \rho_0, \gamma)$

