



IDALAB

EFFICIENT DATA ANALYSIS SOLUTIONS



PARIS
LODRON
UNIVERSITÄT
SALZBURG

Tutorial RL Bootcamp Salzbun

Sinonimi
Kliniken

- 10 dimensional continuous state S and action space $A \in [-1, 1]$ (actions are bounded/constraints) (observation is state)

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Rewards R negative of RMS of states $r_t \propto -\sqrt{\sum_k \Delta(s_t^k)^2}$

- The dynamics of the system is characterised by: $s_{t+1} = Ra_t + s_t$

- Initial criteria: Initial distribution p_0

• Episodic training

Termination criteria:

• Maximal number of interactions (truncation)

- RMS below mean element uncertainty (successful termination)

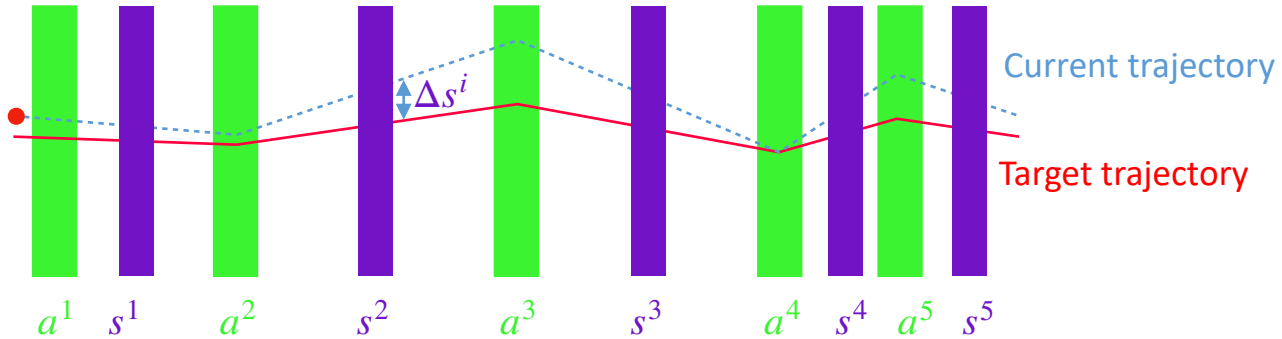
- states $s_i \succ$ beam pipe (termination or clipping)

- Transitions P are deterministic as stochastic, $\gamma = 1$

- If we speak about different tasks i (MPDs) we mean different matrices \mathbf{R}_i



Correctors (magnets) Position

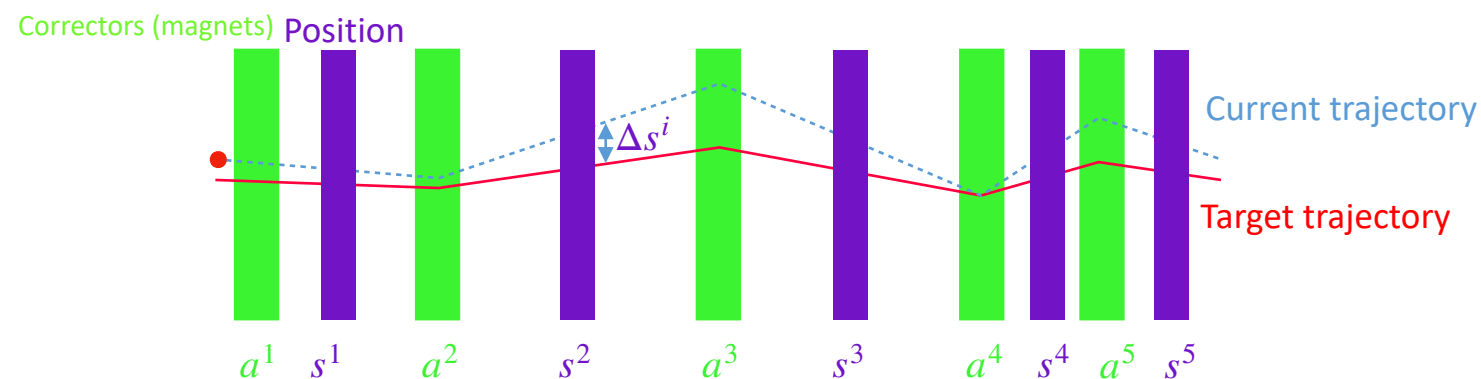


CERN AWAKE steering problem

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

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- 10 dimensional continuous state \mathcal{S} and action space $\mathcal{A} \in [-1, 1]$ (**actions are bounded/constraints**) (observation is state)

- Rewards \mathcal{R} negative of RMS of states $r_t \propto -\sqrt{\sum_k \Delta(s_t^k)^2}$

- The dynamics of the system is characterised by: $s_{t+1} = \mathbf{R}a_t + s_t$
- Initial criteria: Initial distribution ρ_0
- Episodic training
- Termination criteria:
 - Maximal number of interactions (truncation)
 - RMS below measurement uncertainty (successful termination)
 - States $s_i >$ beam pipe (termination or clipping)
- Transitions \mathcal{P} are deterministic or stochastic, $\gamma = 1$
- If we speak about different tasks i (MPDs) we mean different matrices \mathbf{R}_i

Details of the problem I