# Towards Data-efficient Model-based Reinforcement Learning

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**Abstract:**

Reinforcement learning holds great promise towards solving challenging control tasks by employing large-scale compute. Recently, the focus has shifted towards model-based methods due to their promise of improved data-efficiency, which is required for real-world tasks where a perfect simulator is not available. In this talk, we discuss two critical components of model-based RL: model-learning and exploration. For the first topic, we draw inspiration from the empirical success of iterative learning control and demonstrate that the core ideas and properties carry over to the deep setting. Secondly, we identify issues with the optimization schemes in current model-based approaches and introduce a theoretically grounded yet practical optimistic exploration scheme that can successfully solve challenging tasks.