

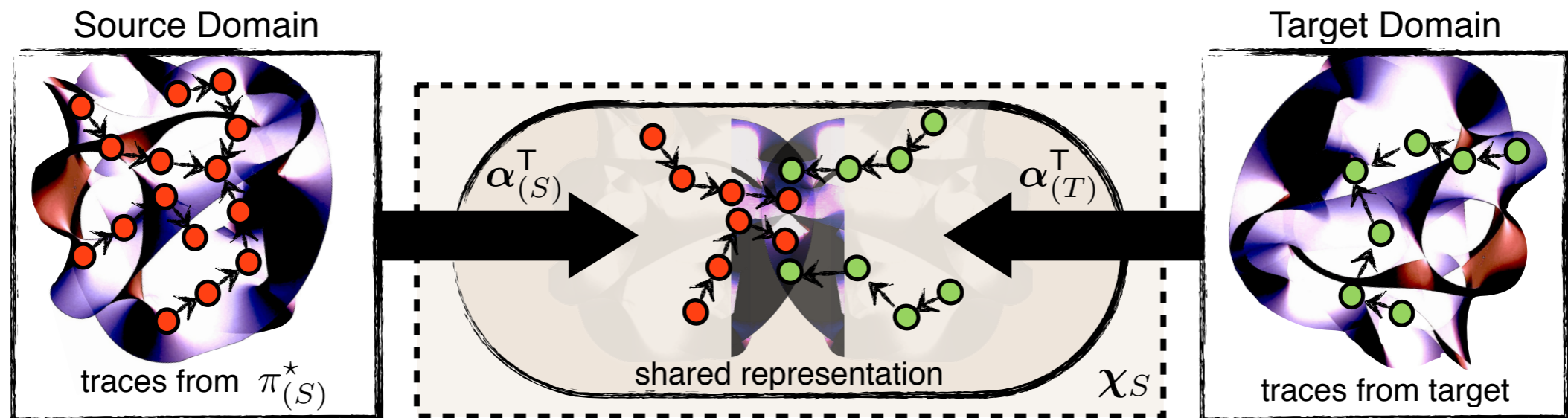
Unsupervised Cross-Domain Transfer in Policy Gradient Reinforcement Learning via Manifold Alignment

Haitham Bou Ammar, Eric Eaton, Paul Ruvolo, Matthew Taylor

Main Contribution: an autonomous framework for learning inter-task mappings

Approach

Phase I: Learn cross-domain mapping via unsupervised manifold alignment



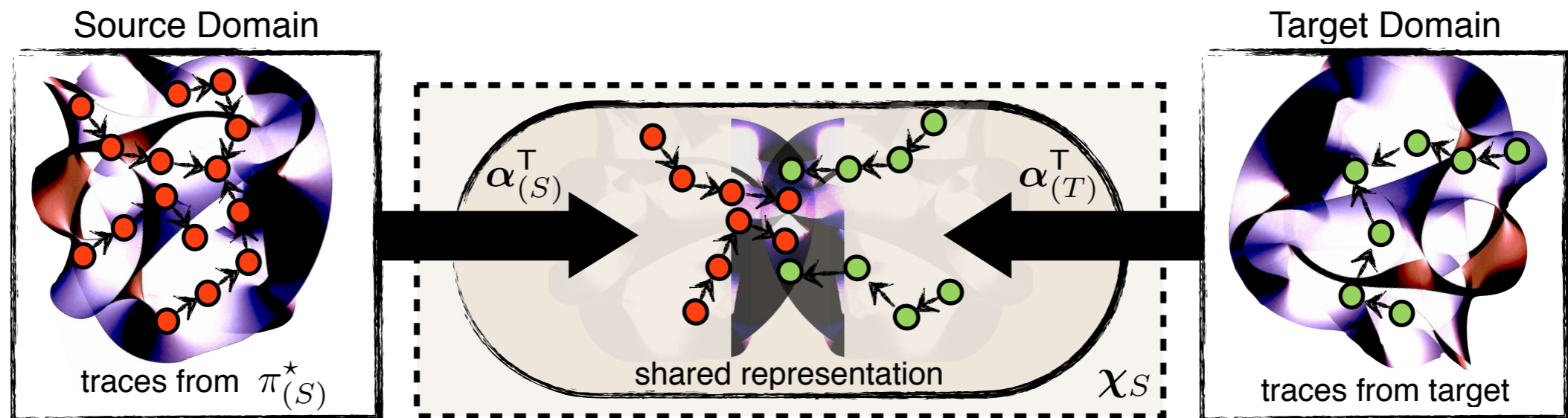
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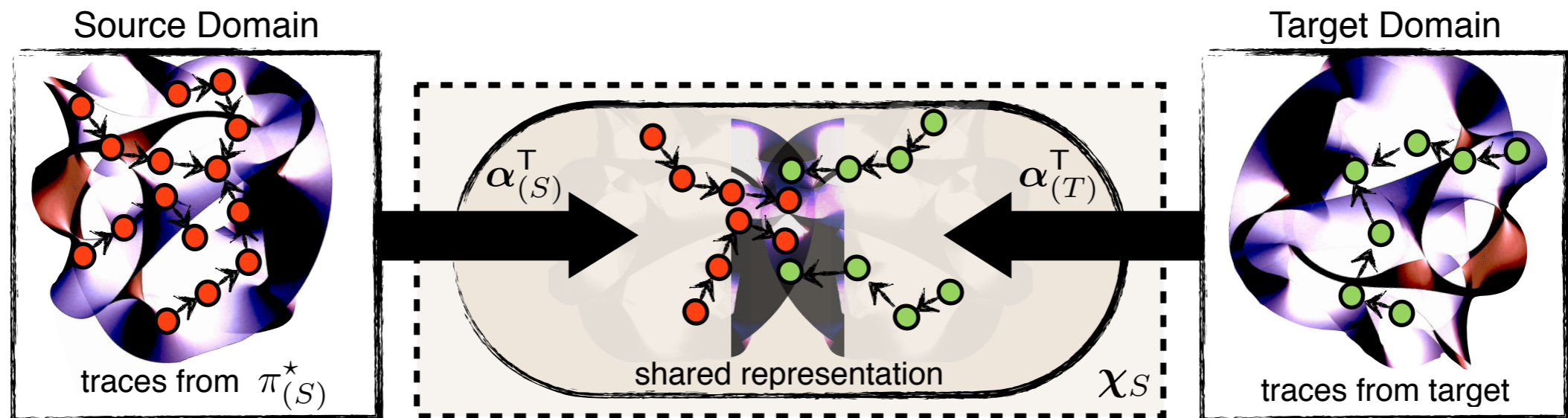
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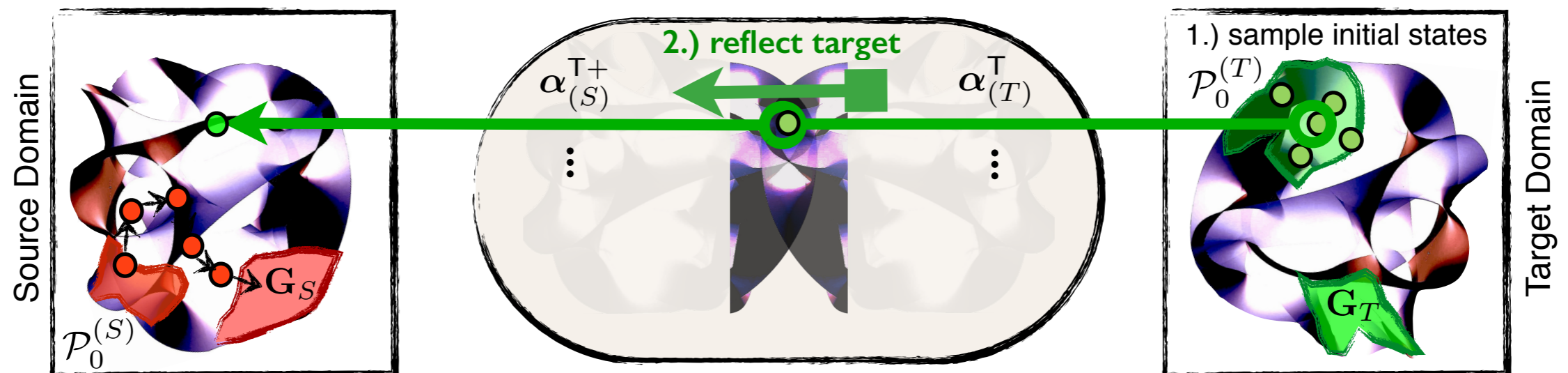
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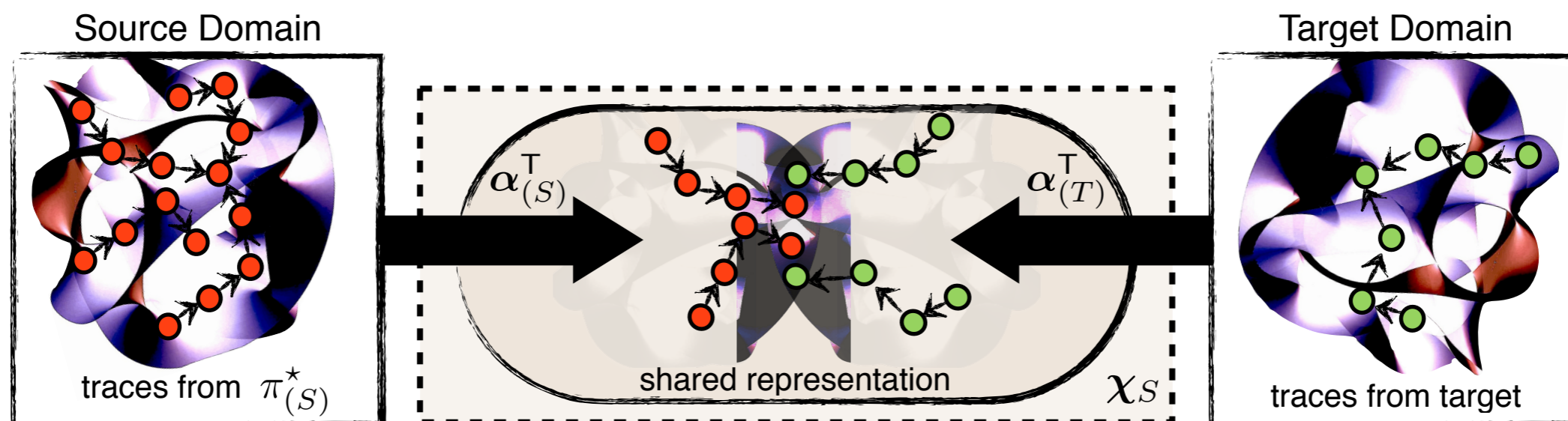
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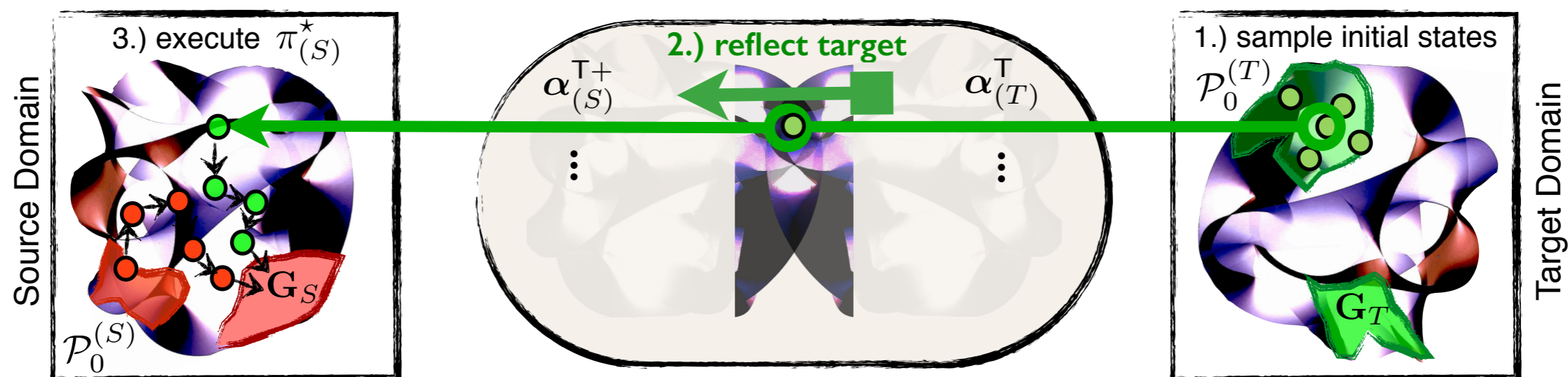
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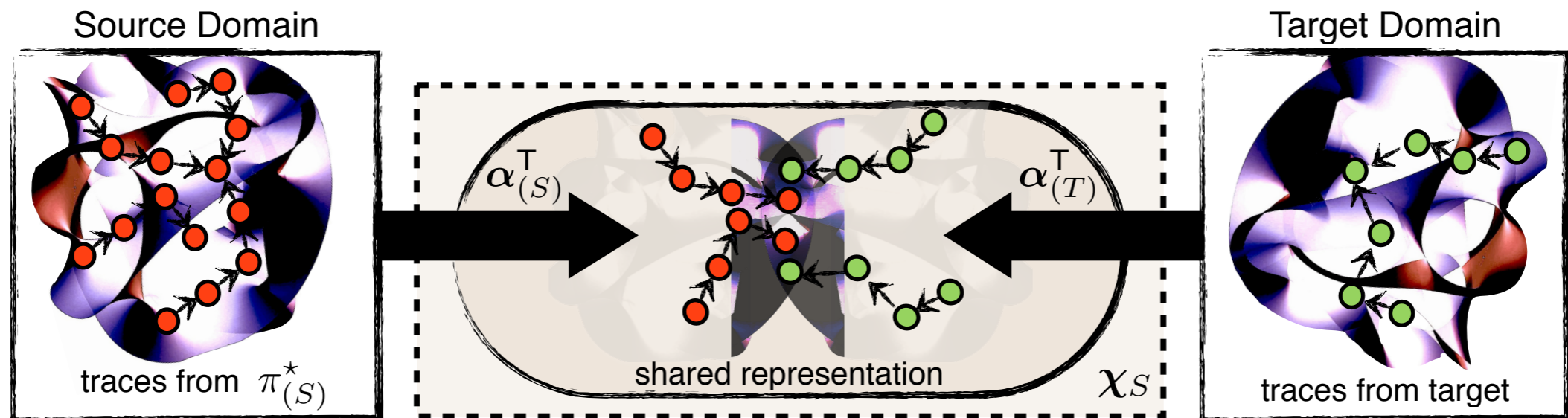
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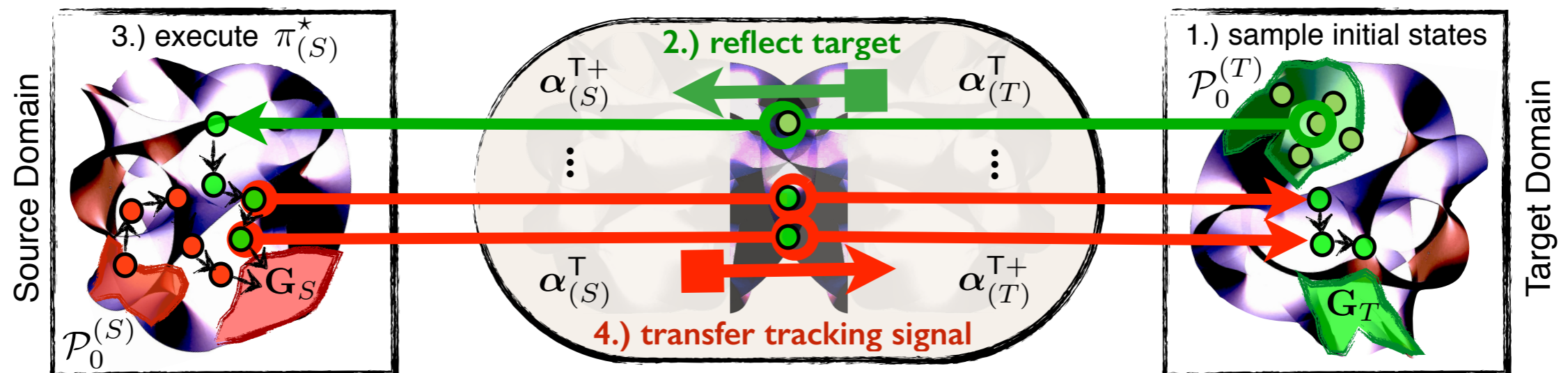
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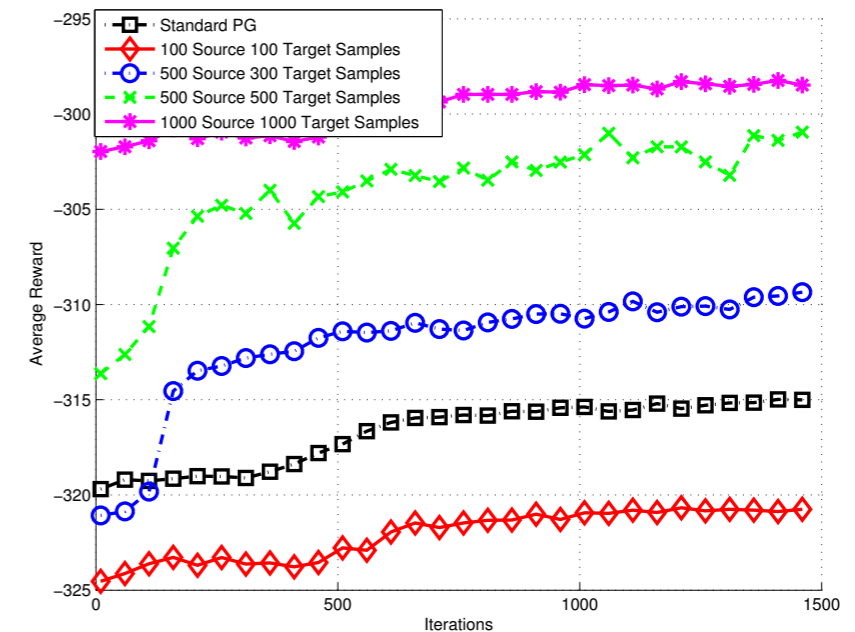
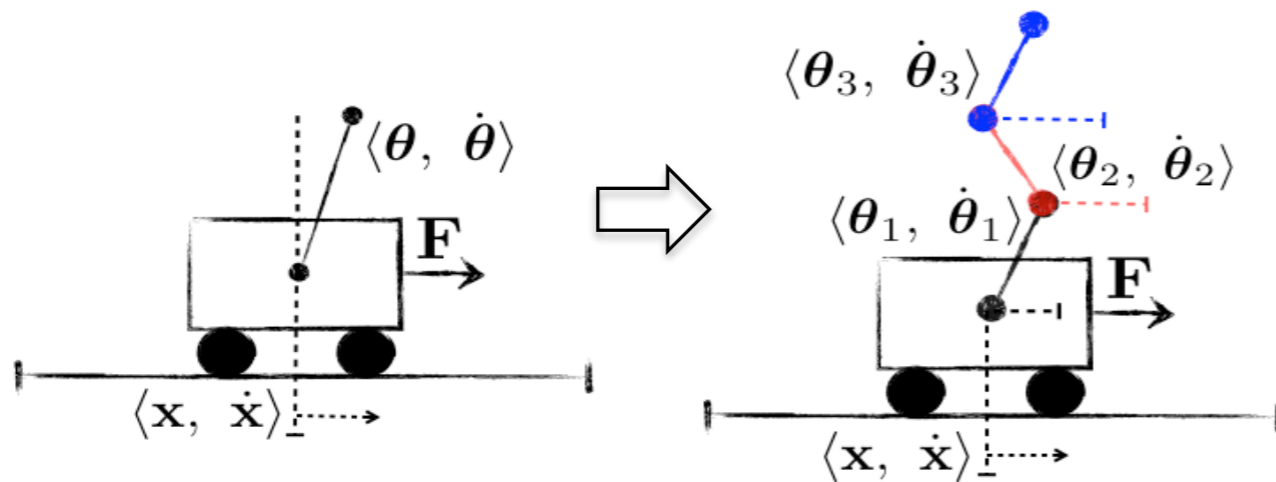
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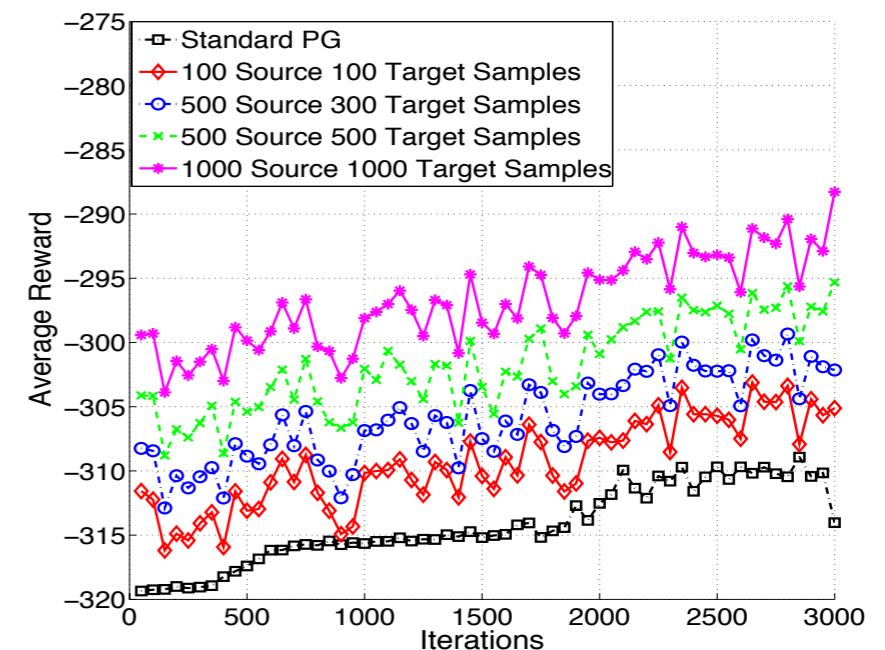
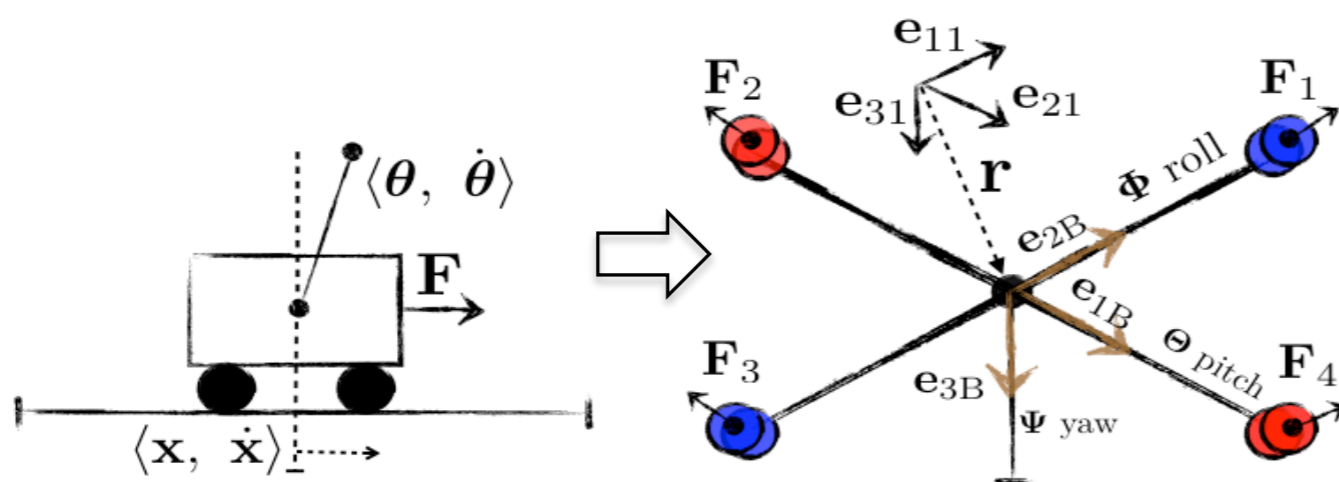
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Cart-Pole to 3-link Cart-Pole



Cart-Pole to Quad-Rotor



We demonstrate robust cross-domain transfer between highly dissimilar tasks, and show that transfer quality is correlated with manifold alignment quality