

(e) SafetyAntVelocity-v1 (f) SafetyHalfCheetahVelocity-v1 (g) SafetyHumanoidVelocity-v1 (h) SafetySwimmerVelocity-v1 Figure 1: The distribution curves fitted by GPD and Gaussian on the training data in EVO. The fitting accuracy is quantified using the Kolmogorov-Smirnov test, as shown in the title, where lower values indicate higher fitting accuracy. GPD presents accurate fitting performance across various data distributions.

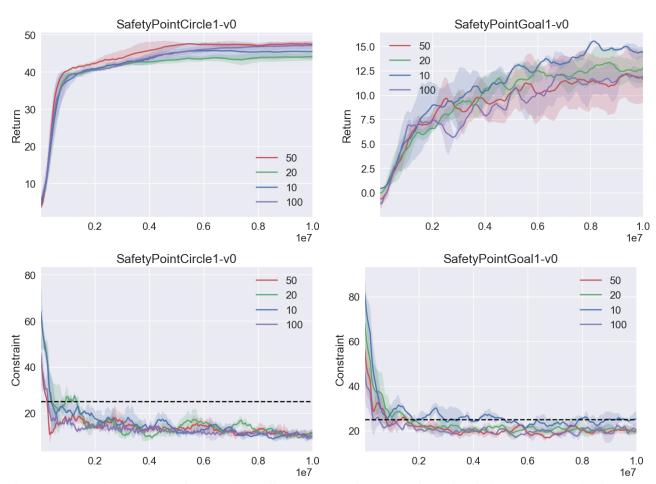


Figure 2: The training curves of EVO using different sample sizes. In SafetyPointCircle1-v0, EVO maintains strong constraint satisfaction and performance even with limited 10 samples. In SafetyPointGoal1-v0, constraint satisfaction maintains once the sample size exceeds 20.