

# PHYSICS-BASED SKINNED DANCE GENERATION WITH RL FINE-TUNING

**Anonymous authors**

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## A APPENDIX

We further provide some video examples in the supplementary materials. The materials are divided into four folders: (1) “ours\_vs\_EDGE”; (2) “freezing\_motions\_by\_FACT”; (3) “failure\_case\_by\_post\_processing”; (4) “freezing\_motions\_wo\_anti-freezing\_reward”.

“ours\_vs\_EDGE” consists of videos that compare EDGE with our proposed method to further prove the effectiveness of our method. The left motions are generated by our method, while the right motions are generated by EDGE. Some parts of the videos have been slowed down for a careful look at the body penetration occurrences. We can see that our proposed method can reduce the penetration significantly. Referring to Fig. 2 and Tab. 1 in the main paper for analysis.

“freezing\_motions\_by\_FACT” consists of the freezing motions generated by FACT to prove that FACT tends to generate freezing motions. The left motions are generated by our method, while the right motions are generated by FACT. We can observe that the visual quality of the motions by FACT is diminished because of the freezing motions. Referring to Tab. 3 in the main paper for analysis.

“failure\_case\_by\_post\_processing” includes the failure cases of motion projection (*i.e.* EDGE w/ Proj) to prove the effectiveness of RLFT. The left motions are generated by our method, while the right motions are generated by FACT. We can observe that the imitation policy failed to imitate the generated motions, resulting in falling. Referring to Fig. 3 and Tab. 2 in the main paper for analysis.

“freezing\_motions\_wo\_anti-freezing\_reward” consists of the comparison between our proposed method and Ours w/o AF to prove the effectiveness of anti-freezing reward. The left motions are generated by our method, while the right motions are generated by Ours w/o AF. We can find that with the anti-freezing reward, the generated motions are more dynamic, while the motions without the anti-freezing reward have a relatively smaller magnitude and slower speed, which tend to freeze. Referring to Fig. 3 and Tab. 3 in the main paper for analysis.