

混合数据驱动的预测控制用于鲁棒且反应迅速的外骨骼运动合成

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我们提出了一种新颖的 HDDPC 框架，将接触调度与下肢外骨骼的连续域轨迹规划相结合。通过模拟和硬件实验，HDDPC 框架展示了其实现稳定和自适应行走的能力。在模拟中，S2S 动态和连续域轨迹的整合增强了外骨骼的反应能力，使其能够有效地从外部干扰中恢复。硬件结果证实了 HDDPC 控制器的有效性。未来的工作将侧重于更快速地在在线运行计划器，通过在线更新 Hankel 矩阵来提高框架适应时变扰动的能力，并展示在个体差异中的鲁棒性。此外，我们的目标是将应用扩展到更复杂的场景，如爬楼梯和动态环境中的其他具有挑战性的设置。

This research was supported by Wandercraft. Research involving human subjects was conducted under IRB No. 21-0693.

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