Impact-Aware Manipulation for Logistic Environments

Niels Dehio

CNRS-UM, LIRMM, Montpellier 34090, France

The latest generation of robots offers advanced sensing capabilities that enable interaction through forces. However, contact transitions are often planned with near-zero velocities, reducing the set of feasible robot motion. On the contrary, generating intentional impacts enables us to perform manipulation tasks more efficiently, for example resulting in faster throughput in logistic scenarios. The challenge is to ensure reliable control while dealing with the non-smooth dynamics. Experiments for accelerated bi-manual box grabbing with a Dual-Kuka system and the humanoid HRP4 will be presented.