

# Constrained Bimanual Planning with Analytic Inverse Kinematics

Thomas Cohn, Seiji Shaw, Max Simchowitz, Russ Tedrake

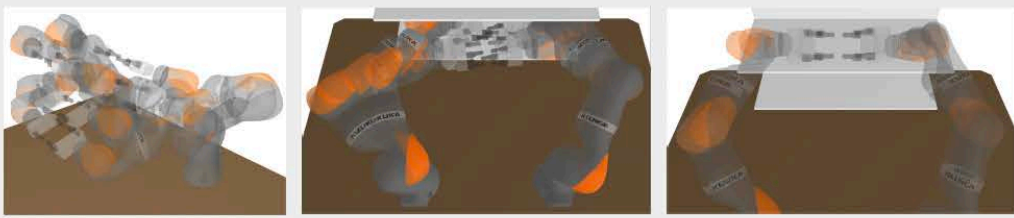


Check Out our Website for the Preprint and Further Results

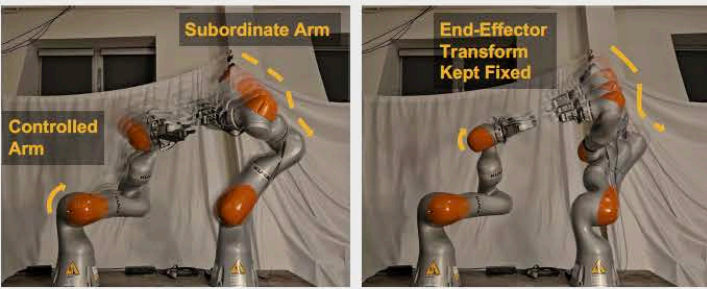
## Why Use this Parametrization?

- Automatically satisfy kinematic constraints
- Works with any planning method
- No nonlinear equality constraints

## Convex Collision-Free Sets in C-Space

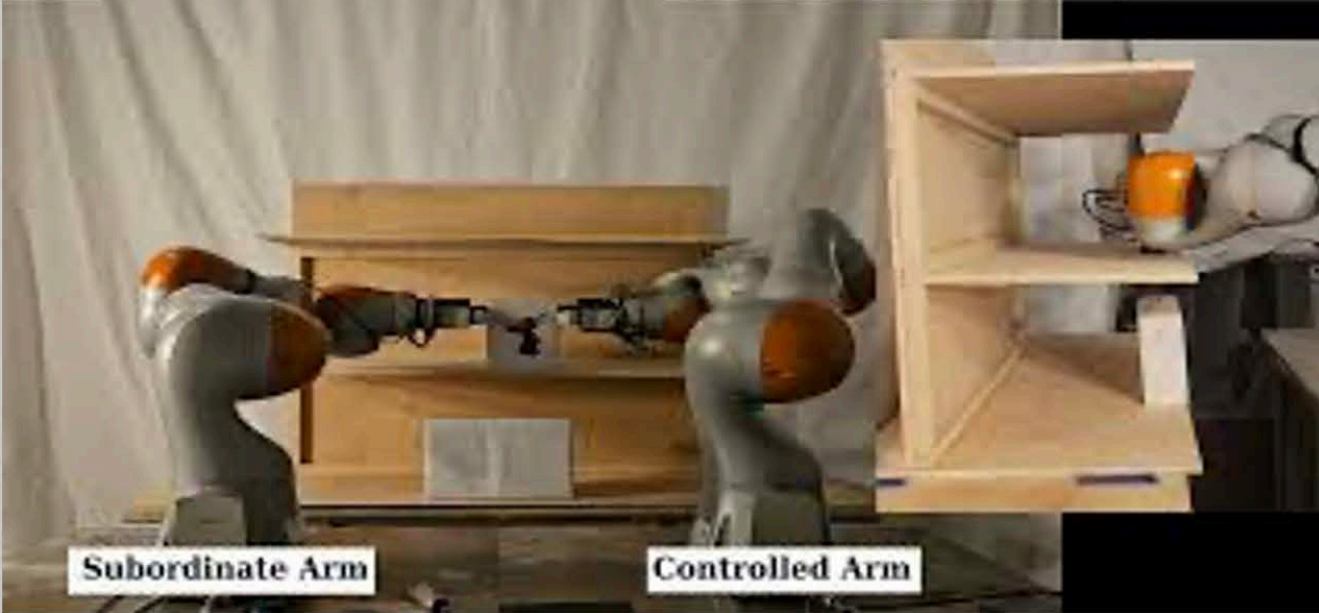


## Parametrization

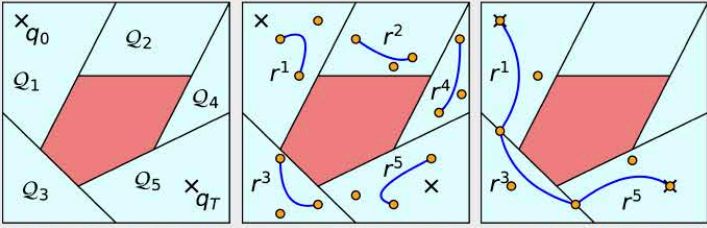


Planning is done in the configuration space of the joints of the controlled arm and the continuous redundancy parameter of an analytic IK solution applied to the subordinate arm.

## 1x (Unconstrained) BiRRT



## Planning through Convex Sets



Reproduced from Motion Planning around Obstacles with Convex Optimization, Marcucci et. al.