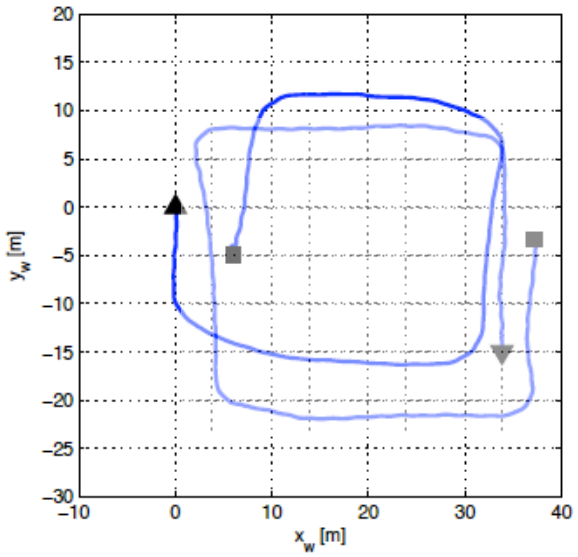
ELECTIVE IN ROBOTICS 2010/11
Short project in Module "Locomotion and Haptic Interfaces"

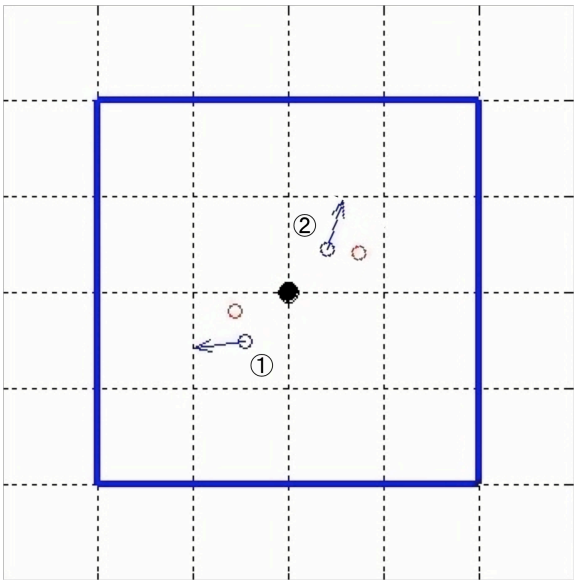
Two simultaneous users on the CyberWalk platform

Consider the 2D omnidirectional CyberWalk platform and the final version of the acceleration-level controller (with gains as a function of the walker orientation) considered in the slides (see MotionControl_CyberwalkPlatforms_PartII.pdf).

Assume that two users are walking on the platform, and are both localized by a vision system. Define a control strategy that tries to keep both of them on the platform for generic intentional motions, such as linear or square paths, circles, random paths biased in some direction, etc. (avoid the nastiest cases, e.g., when the two users walk at constant speed in opposite directions). Try to guarantee smoothness of the platform commands (for instance, if you decide to switch from one control law to another).

Represent your simulation results with time plots of variables and commands, and with 2D stroboscopic views or movies such as the ones shown below.





In principle, two groups may work independently on this small project (with different strategies proposed).

ADL, November 21, 2010