Towards High-Performance Whole Body Control of Legged Hydraulic Robots

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- With hydraulic robotic systems, nonlinear model-based (NMB) control design methods are shown to provide a superior control performance in relation to other control methods... However, the highly nonlinear dynamic nature of hydraulic robotic systems makes stability analysis of the NMB control system design a challenging task.

- Virtual decomposition control (VDC) approach is used to design a stable control system in a subsystem level without imposing additional approximations in the control design.

- Individual metering for the hydraulic actuators with the system supply pressure control with the guaranteed system stability is discussed.